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The Trade Cycle and Capital Intensity

By R. G. Hawtrey

Mr. Kaldor, in his article in Economica for February, 1939, uses the expression "capital intensity" in place of the "period of production" of the Austrian school, to denote a measure of the ratio of capital to labour in production. "There is," he says, "no absolute or unique measure of this ratio," and so he is content to choose an index which will "enable us to say whether the ratio has increased or diminished, even if the exact quantitative magnitude of the change registered by a particular index may have no special significance" (pp. 42–3). His choice is the ratio between initial cost and annual cost involved in the production of a certain stream of output. Annual cost here means the annual outlay by the entrepreneur, and therefore excludes the entrepreneur's own profit.

The ratio between initial cost and annual cost is, of course, a *period of time*; the ratio of £20,000 down to £10,000 a year is two years. It is not very clear in what respect this ratio differs from the period of production. It is possible to include profit in costs for the purpose of calculating the period of production, and I did so in arriving at the "standard" period of production in my *Capital and Employment* (pp. 24–9). And since a part of any entrepreneur's costs will include other entrepreneurs' profits, this seems the preferable alternative. But it is not essential.

In my *Capital and Employment* (p. 36) I distinguished the "widening" of capital, being the extension of capacity without any change in the amount of capital employed for each unit of output, from the "deepening" of capital, where the amount of capital employed for each unit of output is increased. Mr. Kaldor rejects the ratio of initial cost to output, among other alternative indexes of capital intensity, as having to be corrected for price changes (p. 43 footnote). It is not quite clear why such a correction should be needed for the ratio of capital to output any more than for the ratio of capital to current costs. Indeed the argument seems rather to work the other way. Of any given installation of new plant it is possible to say without any reference to the price of the product whether it is or is not intended to increase the amount of capital employed per unit of output, whereas annual cost must be expressed in monetary terms. This is not important, for initial cost, like any other heterogeneous economic quantity, must in any case be expressed in monetary terms and, so long as initial cost and annual cost are being calculated as at a moment of time, the comparison is based unequivocally on the prices at that time. But it is difficult to see any ground for preferring cost to output as the basis of comparison. In one passage (p. 45) it is taken for granted that a greater expenditure of capital per unit of output is equivalent to a higher degree of capital intensity. But, with the definition assumed, that is not necessarily so.

Mr. Kaldor's thesis is that " the capital-intensity of investments falls during a boom period and rises during a depression period," and that therefore " newly created productive capacity increases faster than the rate of investment during the boom, and falls faster than the rate of investment during depression " (p. 57). That is to say, a " boom " gives a special stimulus to the widening of capital, at the expense of deepening.

Without dissenting from this conclusion, I find the reasoning by which he arrives at it faulty. The scope of operations of a producing concern is subject to one or other of three limits, first its selling power or goodwill, secondly its capital resources, and thirdly its command over available factors of production. Mr. Kaldor expresses the existence of these limits in terms of " marginal efficiency " or " the ratio between the increase in profits (per annum) and the increase in the amount of capital invested, when the method of production adopted (the degree of capital intensity) is assumed to be given " (p. 50, footnote). " The cause of falling marginal efficiency curves to the individual firm," he says, " is to be sought in falling demand curves for the products and/or rising supply curves for its factors " (p. 46). And " the supply curves of investible funds . . . will be rising if the firm's own capital is limited and its ability to borrow in the market is limited or if the entrepreneur's willingness to invest his own funds (or borrowed funds) in his own enterprise declines with an increase in the investment" (p. 47).

For a particular trader[1] the three limits are represented by two curves. One relates the amount of capital employed to the marginal cost of borrowing, that is, to the cost to him of raising an additional unit of capital. The other relates the amount of capital employed to marginal efficiency, that is, to the profit to be gained from an additional unit of capital. "Profit" here means the excess of the price of the product over costs other than cost of borrowing.

The assumption is that the limit of the capital raised by the trader takes the form of a rise in the cost of borrowing, and the limit either of selling power or of available factors of production takes the form of a fall in profit and so in marginal efficiency. Mr. Kaldor takes for granted that the capital raised will be pushed to the limit at which "the producers' profits, after deduction of interest charges, including the necessary reward for risk-bearing" are maximised (p. 45), and that that will be accomplished when the cost of borrowing becomes equal to marginal efficiency.

To identify the surplus thereby maximised with *profit* is a mistake. That this is so when conditions of perfect competition are assumed is now, I think, fairly well recognised. For then if, as is very commonly the case, marginal cost is falling as output is increased, the "surplus" to be maximised is a negative quantity, and even with a rising marginal cost there is no reason why the surplus should provide an adequate profit.

There have been attempts to base a theory of profit on imperfect competition. If the price at which a trader sells can diverge a little from the prices charged by his competitors without immediately causing more than a moderate change in the amount of his sales, he can be supposed to be able to obtain an extension of sales at the cost of a price concession. The extension of sales will cease to be profitable at a stage at which there is still an excess of price over marginal cost. This permits of a larger surplus, but it is not a solution, for the surplus is not necessarily adequate or even in all cases a positive quantity.

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[1] I think the term "trader" may be conveniently used to include any concern engaged in producing or buying and selling. In strict usage the term "firm" used by Mr. Kaldor means individuals or partnerships to the exclusion of companies.

The theory of imperfect competition regards the limit of selling power as imposed by a gradually declining marginal net revenue. The limit is better represented as approximately fixed. The hypothesis of perfect competition, that any price concession, however small, would at once lead to an indefinitely great extension of sales, must mean that competitors are immediately compelled to make the same price concession in order to preserve their own selling power. And even under imperfect competition, though the compulsion is not so imperative, that is substantially what happens.

It follows that it is not possible for a trader to extend his sales by cutting prices, because he will be immediately met by cuts on the part of his competitors ; he and they will merely share in whatever increase in total demand the general fall in price may bring out. And the same applies to expenditure on advertising and other expedients for extending sales at a given price. All that the theory of imperfect competition says is that, if competitors do *not* take action, a trader can raise or lower his prices a little without causing more than a moderate immediate change in his sales.

A price war or an advertising war is not a normal condition of any market. While it lasts, it is sheer loss to the combatants. A trader does not start it unless he expects to gain ultimate advantages sufficient to compensate him for the immediate loss. When, as is usual, there is no particular reason to suppose that any change would be made in the relative positions of the traders dealing in the market, it is to no one's interest to embark on a conflict ; there will be a tacit agreement to accept things as they are. Each trader will be content to sell at the market price within the circle of his business connection, and the market price must be such as to secure an adequate income to any normally competent and fortunate trader with a moderate scale of business.

The force of competition that keeps the rate of profit down to this level lies in the possible intrusion of newcomers in the event of the rate of profit being high enough to attract them. The " moderate scale of business " which yields an adequate income is the scale on which such newcomers would expect to be able to work.

Thus it is a mistake to suppose that a trader pushes the scale of his operations to the point at which marginal cost is *equal* to marginal net revenue. The price at which he contemplates selling will *exceed* the prime cost of his marginal output by an amount calculated to yield a normal profit per unit after covering overhead expenses. The actual rate of profit will, of course, often depart widely from the normal. But the trader *aims* at a normal rate, and to maximise the income he derives from his profits he will have to exploit his selling power or business connection to the full. In order to do so when his sales increase, he may have to raise fresh capital, and he may be faced here by a different limit, in that he may be unable to raise enough capital to take advantage of his increased selling opportunity.

Mr. Kaldor's curves presuppose that an economic quantity can be expressed in terms of one variable. His supply curve of investible funds relates the amount of capital employed by the trader to the cost of raising the capital, the cost being composed of interest and " risk ". The limit is represented by a rising " marginal risk premium ", though he adds that, in so far as the limitation is due to the trader's own capital and his power to borrow being limited, " the increase in supply price will be discontinuous rather than continuous, and the curve can be horizontal over a certain range " (p. 70). Nothing is gained by plotting curves to represent discontinuous functions of that kind. If a car runs into a vertical wall, we can, if we like, say that the gradient became one in one, but to call the vertical a gradient does not conduce to clearness either of thinking or of description.

" Risk " is a too comprehensive term, introduced to cover everything other than the rate of interest that may deter a borrower or offer an obstacle to borrowing. All plans relating to the future involve some degree of uncertainty, and all detrimental consequences, other than those specifically part of a bargain, may in a sense be regarded as risks. And it is of course true that the circumstances which put a limit to a trader's capital are for the most part such as would usually and quite properly be called risks. He starts with his own resources, and will very likely arrange to exclude a portion of them from the risks of the business by adopting the form of a private company with limited liability. He can supplement the capital he puts into the business by borrowing on the security of the business itself.

He thereby increases his own risk of loss in case of failure, because the loans will take precedence of his own claims in case of liquidation. The lenders will rely primarily on the value of the business as a going concern for their security, but will probably be unwilling to go beyond the value of tangible property which would be realisable in case of failure. So long as the capital needed to exploit the trader's opportunities is within these limits, the "cost of borrowing" per unit of capital raised is approximately constant, and we have Mr. Kaldor's straight line. When the capital needed begins to strain the limits, the trader comes up against something very like a vertical wall; at any rate the possibility of slightly extending the limit by one expedient or another is not a matter of great practical importance.

But if the trader has a good prospect of carrying on business successfully on a larger scale than his own resources and the security of the business will permit, he may be able to bring in partners or shareholders with capital, and eventually may be able to make a public issue of shares. That is a step which means a decreased rather than an increased risk premium for himself, and may not mean even an increased risk for the concern as a whole.

Risk undoubtedly enters into all these calculations, but it is not mere risk. The risks of any enterprise are *relative* to the knowledge and skill of the trader who undertakes it. What economists are accustomed to regard as the reward of risk-bearing is for the greater part the reward of knowing how to avoid risks, and so of reducing to a minimum that residue of risk which is due to pure chance.

And as the scale on which a business is to be carried on is enlarged, and its structure adapted to a correspondingly greater capital, other considerations than interest and risk enter into the reckoning. The trader has to share the responsibility of management and the prospects of profit with other shareholders; he has to associate with other participants and to have personal relations with them.

Mr. Kaldor's reasoning leads up to the conclusion that for a trader under conditions of perfect competition, marginal efficiency will be constant, and any change in the rate of interest "will leave the degree of capital intensity [deepening] unaffected" (pp. 48–9). For whatever the rate of interest may be, he will push his capital equipment to the limit at which the "cost of borrowing" is equal to marginal efficiency. The "cost of borrowing" cannot be altered except by a change in what Mr. Kaldor rather quaintly calls "real wages", the ratio of input prices to output prices (p. 48), because only so can marginal efficiency be modified.

With his assumptions the principle of imperfect competition has to be called into operation in order that a fall in the rate of interest may induce a trader to resort to the installation of additional labour-saving appliances. For then, when he sets out to take advantage of the fall in the rate by extending his output and his plant, he finds that he must make price concessions to increase his sales and must offer higher wages to procure labour. Marginal efficiency is reduced, and with a lower cost of borrowing the deepening of his capital becomes worth while.

What this really means is that, when the limit is set to his operations by the amount of capital he can raise, he will confine himself to the capital equipment customary in the industry and used by his competitors. Whereas, when the limit is put by his selling power, and he can raise more capital, he may resort to "deepening" in the form of the installation of appliances not already customarily in use. That is to say, widening takes precedence of deepening in so far as the demand for products requires. Only the residue of capital raised, after the requirements of widening have been filled, is left for deepening. This is broadly (though not quite invariably) true, and does not depend on the fallacious assumption that the rate of interest must be equal to marginal efficiency. Indeed the motive for exploiting selling power to its limit, when every unit sold yields a normal profit, is much stronger than it would be if the profit tapered away to nothing. If there are exceptions, and projects of the deepening type are sometimes given the preference, that is because such projects are rarely of a purely "marginal" character, and they may promise a very high yield. The cost-saving appliance which is recognised by industry and is only not in use because its yield does not exceed the market rate of interest is a fiction. Especially where the introduction of an appliance means the establishment of a new industry to manufacture it, the advantages anticipated from it must be very substantial to attract the requisite enterprise and capital.

New industries may be either of the widening type or of the deepening type, the former producing new consumption goods and the latter new instruments of production. Both types have to make new markets for their products, and are at a disadvantage in competing for capital with traders who can point to an actual growth of demand for an existing product as the basis of their requirements.

Mr. Kaldor's curves relate to the behaviour of a particular trader. When he comes to the trade cycle, he is concerned with the behaviour of an entire community. The discontinuities are smoothed out. But his erroneous assumptions remain. He still expresses the capital employed in terms of marginal efficiency and so of the prices of products and factors, and the capital raised in terms of the cost of borrowing. And he still imposes on the system an equilibrium which requires the cost of borrowing and marginal efficiency to be equal, and does not yield normal profit on the marginal unit of output.

Mr. Kaldor describes the trade cycle as " a cyclical variation in the scale of current production and in the scale of investment undertaken by the representative firm, accompanied by variations in the prices of finished products in terms of wages and in the rate of interest " (pp. 52–3). More fundamentally it might be described as a fluctuation in demand, or in the flow of money which constitutes demand, for from that all the other fluctuations are derived. At any rate the fluctuations in the price level are derived from the fluctuations in demand. Variations in prices do not occur of themselves; they are made on the initiative of the traders who quote them. And the traders are led to raise or lower prices by variations in demand as manifested in actual sales.

An expansion of general demand is felt by the individual trader in the form of an increase of sales. An increase in sales to the consumer is passed on to the producer in the form of increased orders to replenish the retailers' stocks. Prices are raised by producers when the volume of orders is such as to strain their productive capacity, and by retailers when they experience delay and difficulty in securing fresh supplies. Similarly when demand shrinks and orders fall off, producers competing for orders make price concessions, and retailers reduce prices in order to clear accumulating stocks.

A curve which relates output and extensions of capacity to *price* gives an incorrect idea of the motives at work. The price changes are no more than symptoms of the movements of demand. Indeed, in so far as there are forecasts of prices at all, they are guided by the state of demand. What leads a producer to extend capacity is the prospect of increased selling power, an enlargement of his goodwill. A rise of price is a transitory effect of the increase of demand, destined to lapse as soon as he and his competitors have completed the extension of capacity. They aim at such an extension as will meet the demand at prices which will still yield a normal profit. And they *may*, of course, overdo it. They may, between them, arrive at a productive capacity which cannot be fully employed without causing a glut of demand for their product and a fall of price that will reduce profits and possibly extinguish them altogether. But when the demand for some products reaches satiety, all the more demand is set free for others. Capital outlay in the aggregate is limited, and if there has been too much in one direction there will have been too little in others, unless consumption demand has reached a state of universal glut.

Mr. Kaldor refers to the contingency of an inadequate consumption demand giving rise to a glut of capital (p. 57), but he does not pursue the topic. His chief concern is with the extension of capital outstripping the supply of *labour*, " there would be more ' machines ' than ' men ' . . . . There must come a point beyond which the creation of further equipment can add nothing to output " (p. 58).

" If the forces of competition acted smoothly, the emergence of excess capacity in equipment would involve a rise in real wages (a fall in profits per unit of output) which in turn would lead to the introduction of more capital intensive equipment," but Mr. Kaldor adduces four reasons (pp. 59–60) why equilibrium cannot be maintained in this way :

(1) " On account of imperfect competition the fall in the marginal rate of profit need not involve a similar fall in average profits " ;

(2) " The emergence of excess capacity will discourage investment not only on the methods actually adopted but also on the more capitalistic methods " ;

(3) " The rate of interest cannot suddenly be reduced " ;

(4) Disappointment will " shake the investors' confidence ".

Surely this is not a very impressive array of arguments! The case supposed is that the widening of capital, led on by excessive profits, has been overdone. There is an "emergence of excess capacity", not in the sense that consumption demand falls off and profits shrink, but that there is an insufficiency of labour to man the additional equipment. Mr. Kaldor seems to imagine that the entrepreneur who finds himself debarred by the shortage of labour from gaining profits at the prevailing high rate cannot be induced to resort to the deepening of capital (the adoption of more labour-saving equipment) except by a fall in the rate of interest, and that the fall in the rate of interest can only take place if there is a fall in the marginal rate of profit!

A state of things is assumed in which the widening of capital has been stimulated by an expansion of demand. In view of the resulting pressure on the investment market, the long-term rate of interest will have risen. If wages rise and profits are diminished, the stimulus to widen capital will be lessened (unless there is such a monetary expansion that demand is increased in the same proportion as costs). The pressure on the investment market will be diminished and the rate of interest will fall. The significance of the fall in the rate of interest which is so brought about is simply that the gap to be filled by the deepening of capital is all the greater.

Nor is it quite true to say that the rate of interest cannot suddenly be reduced. "Suddenly" is a relative term. The fall in the rate of interest is a sign that the investment market is not receiving demands for the raising of capital sufficient to use up its resources. If the fall in the rate of interest is in practice gradual, that is because the falling off of the raising of capital is itself gradual. The fall in the rate occurs as quickly as the state of the investment market requires.

Mr. Kaldor also contends that, when the widening of capital has been carried to excess, the deepening will itself be discouraged. He is referring here to the case where a choice has to be made between two different types of equipment, one of which is superior to the other but more costly (p. 59 footnote). If the inferior equipment already exists in superabundance, so much of the cost of the superior equipment as represents the equivalent of the inferior has for the time being no value. To justify the installation of the superior equipment, the additional profits earned on it would have to cover the interest charges on the *whole* cost.

A considerable part of the deepening of capital (though by no means the whole) does take the form of the substitution of a superior and more costly plant for an inferior and less costly, and can only be carried out either in a new installation or in replacement of old plant which has to be discarded. When a general expansion of demand stimulates the widening of capital throughout industry, this part of the deepening process is stimulated along with it. To that extent the widening does not absorb the whole resources of the investment market, and the incidental deepening, by releasing labour, postpones the time at which a scarcity of labour will be experienced. That the deepening merely postpones and does not avoid the scarcity of labour, is due to the fact that only a part and not the whole of the deepening is associated in this way with widening. That means that there are other labour-saving devices which can be installed independently of extension or replacements. The excessive stimulus of widening will tend to crowd out these independent forms of deepening, and, when the widening slackens, there will be arrears of deepening to be overtaken.

Widening tends to take precedence of deepening; the new productive capacity which will enable a trader to take advantage of an expanding demand is a more urgent need than an innovation by which he can reduce his costs. When the need of widening slackens, resources are set free for deepening.

Such a slackening might be caused by a decline of demand, due for example to a diminished flow of money. In that case the stimulus even to independent forms of deepening is likely to be lessened. It is in such conditions that there ensues the heavy fall of the long-term rate of interest which is characteristic of serious depressions. The deficiency of consumption demand leads for the time being to a real shortage of projects for capital outlay, and the fall in the long-term rate is called in aid to stimulate what may be called the "thickening" of capital, the relative expansion of those forms of activity which, under existing methods of production, employ most capital in proportion to the price paid by the consumer. Housing is, of course, the conspicuous example.

But that is not the case we are now considering. We are supposing that the widening of capital is reaching its limit owing to a shortage of labour. The shortage of labour is itself a stimulus to deepening. When Mr. Kaldor says that " the deepening process requires a change in price-relations " (p. 61) he means, I think, that the shortage of labour will not have this effect unless the price of labour rises. That is a mistake. If wages fail to rise, the shortage of labour is all the more acute, and the motive to resort to labour-saving appliances is all the more urgent.

The " diminution of confidence " on which Mr. Kaldor bases his fourth argument is attributed to " the appearance of excess capacity " which implies " that some of the expected profit on investments undertaken in the recent past were not realised ". When he says that this is likely to shake the " investors' " confidence, I think that by " investor " he does not mean the man who places money in the investment market and receives securities, but the man who procures money from the market by the issue or sale of securities and spends the money on additional capital equipment. Is this " investor " to be so blind to the conditions of his business that, when his plant is under-employed and he is missing the chance of profitable orders owing to a shortage of labour, he cannot distinguish between the installation of labour-saving plant which will diminish his need for labour and an extension of the existing type of plant which will further increase it ?

Economists have rightly abandoned the fictitiously rational economic man of the classical tradition, and nowadays they try to allow for the vagaries of irrational human nature. But Mr. Kaldor imagines that the same trader who will with unfailing wisdom promptly adjust the capital he raises to the precise point in the curve at which his surplus receipts are maximised, will yet be so obtuse as not to understand that labour-saving appliances will relieve a scarcity of labour.

Mr. Kaldor's theory is one of many that have been devised to show that a state of activity is self-destructive, that it engenders tendencies which are destined to bring about its own reversal. His theory, however, is not quite so fatalistic as some. For it only sets out to show that an excessive expansion of consumption demand, involving an exceptional stimulus to the widening of capital, would have this effect. He would, I think, recognise that a state of *steady* activity would be consistent with an unvarying rate of progress both of the widening and of the deepening of capital.

He lays stress on the tendency of the widening of capital to " over-reach itself " and so to give rise to an excess capacity which cannot be used on account of scarcity of labour. If this did not occur, there would still be the need of a transition from widening to deepening, as soon as the exceptional growth of consumption demand stopped, but Mr. Kaldor's argument would be greatly weakened. Yet he shows no reason why this " misdirection of capital in the widening process " should occur. Perhaps he would say that, at the moment when a scarcity of labour is first felt, there would be a certain amount of new capital already under construction, the completion of which would create an excess capacity. But the labour shortage would not be felt in all industries at the same time, it would appear first in those industries which had relatively least adequate reserves of the specialised labour required by them, and then in succession in others. It is not unlikely that the instrumental industries themselves would be among the earliest sufferers, so that the effect of the scarcity would be experienced rather in a delay of the widening process than in the creation of excess capacity.

In the early stages of a revival there is probably a considerable amount of under-employed capital, and the stimulus to the widening process will not take effect till most of this surplus capital has come into active use. Thereupon producers will set out to overtake the arrears of widening that have accumulated during the preceding years of under-employment. It may well be found that the capacity of the industries concerned cannot readily be expanded to the extent desired.

When any difficulty is experienced in accelerating the widening of capital to meet an increased consumption demand, traders will postpone replacements. They will keep obsolescent plant and plant which is nearly worn out in operation a little longer than they otherwise would. For a time new and old plant are simultaneously at work. If the expansion of plant outstrips the labour supply, the old plant can be relegated to the scrap heap from which it has only been temporarily withheld.

Mr. Kaldor states his purpose to be to re-examine the thesis of the Austrian school that "insufficient or undesired change in the methods of production during a boom can be a potent source of disequilibrium," and to show "that in so far as there is 'malinvestment' during a boom, it is of a very different character from that contemplated in the theories of the Austrian School" (p. 41). He concludes that a credit expansion ("forced saving") involves the misdirection of capital "for a reason that is *precisely opposite* to that assumed by Professor Hayek" (p. 64), in that it causes an excess of widening instead of an excess of deepening.

The contrast between the two theories, however, is not quite so sharp as he would suggest. For Professor Hayek starts with the assumption of *full employment.* He picks up the story at the moment when the scarcity of labour, which forms Mr. Kaldor's climax, is already imminent. He does, it is true, leave out of account the possible dislocation arising from an excessive and transitory stimulus to widening. But he and Mr. Kaldor agree in supposing that when full employment is reached the system will suffer from an excessive amount of resources being made available for the deepening process.

In Mr. Kaldor's view it is the failure of deepening to respond to the offer of resources that is the cause of trouble, whereas Professor Hayek assumes that it does respond, and is then bound to fall off again. He finds the cause of dislocation in the declining demand for those products of the overgrown instrumental industries which are "specific" in character and become redundant. Professor Hayek assumes that capital outlay is adjusted to the resources of the investment market, and that it is the reduction of those resources that restricts the deepening process. Mr. Kaldor has nothing to say about the resources of the investment market, and seems to take for granted that, if the stimulus to deepening is in any degree impaired, those resources will not be fully employed. In the state assumed of activity and expanding demand, the resources of the investment market are likely to be at a maximum. Profits and therefore savings will be above normal, and savings will be supplemented by speculative bank advances. If the expansive process is to be stopped, capital outlay must cease to exceed savings, and savings must be confined to normal. Mr. Kaldor offers no evidence at all that the diminution of capital outlay consequent upon the falling off of widening will even be *sufficient* to secure this result.

I do not want to argue that the state of things implied in his theory cannot possibly occur. There might be a rather abrupt change in the character of capital outlay through the transition from widening to deepening, and there might be so much delay in launching new projects for deepening that there would be an interval in which capital outlay fell short of savings. Indeed capital outlay is so intractable that a temporary disequilibrium is likely often to occur and by no means only from this cause. Much of the installation of capital is composed of big items requiring long preparation and a long period of production, which do not easily and automatically average out. It is the business of the investment market so to influence the raising of capital as either to stimulate and hasten or to deter and delay such projects, according to the state of its resources. If the response is slow, there is a danger that the market may become the source of an inflationary or deflationary tendency.

But that is not the end of the matter. It is the business of the monetary authorities and the banking system to counteract any such tendency. Mr. Kaldor, like numerous other advocates of non-monetary explanations of the trade cycle, assumes not merely that the monetary authorities either will not or cannot interfere with the forces which he believes to be at work, but tacitly assumes that their non-interference produces precisely that monetary situation which his theory requires. The trade cycle itself he takes as a given fact, with those simultaneous fluctuations in the price level and production which, combined together, imply a fluctuation in the flow of money.

The Trade Cycle and Capital Intensity: A Reply

By Nicholas Kaldor

It would take up too much space to reply adequately to all the questions raised by Mr. Hawtrey; I will restrict myself to four points. The first two concern analytical technique; the last two are on matters of substance.

(1) I have no fundamental objection to the use of the ratio of initial cost to annual receipts, rather than the ratio of initial cost to annual cost, as a measure of capital intensity, if Mr. Hawtrey prefers it. Indeed, I have indicated in a footnote[1] that it is not material which of several alternative indices one chooses for measurement. My reasons for preferring the ratio of initial cost to annual cost were twofold. In the first place it seemed to me more in conformity with traditional usage, being the ratio of "indirect labour" to "direct labour", per unit of output. In the second place, since all three terms—output, annual input, initial input—have to be measured in value terms, it is preferable to choose a measure which is less liable to be affected by price changes. (Mr. Hawtrey seems to suggest that output can be measured in physical terms, so that the question of price changes does not come in at all. This could only be so if output consisted of homogeneous units, i.e. in the case of a single-product firm. But there is, in general, no more reason for assuming that the firm produces a single type of product than for assuming that it employs a single type of factor.)

The two types of measurement come therefore to the same thing, and the conclusions reached by using either measure must be the same. When Mr. Hawtrey suggests[2] that an increased capital expenditure per unit of output does not necessarily imply an increased capital expenditure per unit of annual input, he either overlooks that output, initial input or annual input are functionally related to each other, or he forgets the definition given for annual input.

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[1] Economica, February, 1939, p. 43, note 1.

[2] P. 2 above.

Mr. Hawtrey says that "the ratio between initial cost and annual cost is of course a *period of time* . . . it is not very clear in what respect this ratio differs from the period of production." The "period of production" of the Austrian School is the time elapsing between the application of labour and the emergence of the product. The main objection against this concept is that in the large majority of cases it cannot possibly be calculated. But even in the few idealised instances where the meaning of the Austrian period is clear and unambiguous—as e.g. in the celebrated wine example, where it is assumed that the storage period for all wine is the same, and all the labour involved is in the production of grape juice and none is required during storage—the period of production will not be equal either to the ratio of capital value to annual output or the ratio of capital value to annual input, except in the special case when the rate of interest is zero. I agree with Mr. Hawtrey that either of these ratios can be looked upon as a period of time, and that the Austrian period is also a period of time; but this does not mean that all these periods are necessarily the same.

(2) I am not sure whether Mr. Hawtrey objects to my calling "profit" what the producer maximizes, or whether he merely objects to my assuming that he maximizes something. I entirely agree with him that when marginal costs are falling, and there is perfect competition, the surplus is minimized, and not maximized, when marginal costs are equated with marginal receipts; and so does every other economist since the days of Cournot.[1] But all that this implies is that we cannot assume falling costs and perfect competition at the same time; the two are not compatible. It certainly does not imply that the producer does not attempt to maximize his revenue; or that the equality of marginal receipts and marginal cost is not a general condition of this maximization.

If the surplus which is maximized provides no adequate return, the producer will be driven out of business. I cannot see how the producer can obtain a surplus that is *larger* than this maximum; since by definition he is already getting as much as is possible for him to get in the given circumstances. Under imperfect competition, equality of marginal receipts and marginal costs does not exclude, of course, "profit on the marginal unit of output," since price will necessarily exceed marginal receipts.

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[1] Cournot, *Researches*, English ed., p. 91; Marshall, *Principles*, 8th ed., p. 459. Cf. also my article, "The Equilibrium of the Firm," *Economic Journal*, February, 1934, p. 64.

I am in substantial agreement also with Mr. Hawtrey's views on the entrepreneur's price policy, at any rate for the short period. In the case of many industries, though not perhaps all, "there is a tacit agreement to accept things as they are": the price policy is purely passive. This is because the individual trader believes (and in many cases rightly) that while a policy of price reduction will be followed by similar action on behalf of his competitors, a policy of price increase will not be so followed; hence neither a reduction nor an increase in his price is worth his while. In the terminology of my paper, this is expressed by saying that the marginal efficiency curves will be discontinuous; the curve, instead of gently falling throughout its range, will first be horizontal and then vertical. For rather different reasons the supply curve of capital is also likely to be discontinuous.

I confess therefore to being guilty (together with other writers who employ the analytical tools of the modern theory of imperfect competition) of representing functions which are often discontinuous as if they were continuous. Whether this conduces to clearness of thinking or of description is a matter of opinion. But when Mr. Hawtrey argues that this procedure "renders the reasoning faulty", I must disagree. For none of my conclusions, in the paper under discussion, depended on the assumption of continuity: the analytical technique employed can be equally adapted to deal with cases of discontinuity as well as cases of continuity. All that the existence of discontinuity implies is that the two "limiting cases" mentioned in the paper[1] are also the "normal cases", i.e. that in so far as the curves are discontinuous the normal situation will be at one of the two extremes, rather than in the middle.[2] The advantage of

[1] ECONOMICA, February, 1939, pp. 48–49.

[2] In the case of discontinuous demand functions marginal receipts and, hence, marginal efficiency, is indeterminate within a certain range; and the marginal cost of borrowing must fall within that range. Hence in such cases it might be misleading to say that the marginal cost of borrowing must be *equal* to the marginal efficiency; all that we can say is that it must fall within the upper and lower limits of the latter.

this technique lies precisely in the fact that it is able to cover other cases as well, where the functions are not discontinuous and thus makes it possible to reach results of more general validity.

Hence there is *nothing lost* by "calling the vertical a gradient", and in so far as the gradient is not *always* one to one, but only *sometimes:* and in so far as its variations are important, something is definitely gained by doing so.

Mr. Hawtrey's reminder about the discontinuity of the producer's demand function has convinced me, however, that the importance of real wages in determining the degree of capital intensity adopted is much less than I previously supposed. Since competition is imperfect in most industries, and since selling power is a much more important limitation of the size of businesses than borrowing power, capital intensity in the large majority of cases is probably quite independent of real wages and depends solely on the rate of interest.

(3) A substantial difference between Mr. Hawtrey and myself relates to the question of the emergence of excess capacity which brings a period of high investment activity to an end. This excess capacity can arise for two different reasons. The first is underconsumption; the second the scarcity of labour. As investment activity continues, more and more additional equipment is installed. In order that this additional capacity should be utilised, the demand for goods must expand at the same rate as the capacity to produce them. Where does this additional demand come from? To a large extent, it is self-generated. Additional production, brought into operation by means of additional capacity, creates additional incomes, which must be equal, in value terms, to the increase in the value of output. Hence in so far as the whole of the additional incomes are spent,[1] and none saved, any increase in the supply of goods must create its own demand adequate to meet it. "Underconsumption," and a consequent excess capacity, arises, because not all, but only a part, of the additional incomes are spent, the self-generated demand falls short of the additional supply.

Underconsumption is the first and, in practice, the most important reason, why a boom comes to an end.[2] But there is also a second, and less well-known, reason which may have been an important contributory factor at certain times in the past: the emergence of labour scarcity. Let us suppose that all the additional incomes, generated by additional production, are spent, so that the demand for goods always expands in the same proportion as the supply of goods expands. And let us suppose further, that owing to the scarcity of labour the further installation of additional capacity leads to a smaller and smaller addition to output. The rate of increase in the supply of goods slows down; and—since the increase in demand *depends* on the increase in supply—so does the rate of increase in demand. Finally, both the expansion of demand and the expansion of supply come to a standstill. The individual producer will have no further incentive for "widening". But will he have any *added* incentive for "deepening"? I agree that might be the case, if the volume of his orders significantly outstripped his capacity to fulfil them with his existing equipment and his existing labour force. But there is no reason to assume that a scarcity of labour will manifest itself in this way. Since—for the aggregate of producers—demand depends on supply, a slowing-down of the increase in supply will also imply a slowing-down of the increase in demand. So far from being any extra stimulus to "deepening", reasons can be adduced to show that deepening will be discouraged alongside with widening. And since capital outlay previously consisted to a large extent in widening, and only to a small extent in deepening, aggregate capital outlay may be very much reduced.

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[1] Including, of course, the allowance for depreciation.

[2] The reason why I did not "pursue the topic" of underconsumption is not because I underrated its importance, but because I thought that this part of the story was already well known.

Mr. Hawtrey takes me to task for assuming that the typical producer will be so blind that he will fail to notice that huge profits are waiting for him if only he adopted some labour-saving machinery. *My* producer suffers from no such blindness. The installation of labour-saving machinery would, in fact, only prove profitable to him if *all* producers did so simultaneously—i.e. if they all acted in concert. For while the production of *all* producers determines the demand for the products of *all* producers, an increase in the output of a single producer will only expand the demand for his *own* products to an insignificant degree. Only exceptional producers, like Henry Ford, believe that by expanding their own wage-bill they expand the demand for their products proportionately; and even

Henry Ford, I presume, has ceased to believe in this theory by now.

Mr. Hawtrey must have been assuming that while production ceases to expand, the expansion of demand goes roaring ahead; i.e. that the increase in general demand is fed from some other source than current production. This may sometimes be the case (when, e.g., capital outlay is stimulated by some independent cause such as a new invention), but is clearly not the situation which I contemplated.

(4) Mr. Hawtrey's final criticism is that the trade cycle is fundamentally a " fluctuation in the flow of money " and would not take place if the monetary authorities counteracted these fluctuations. " Mr. Kaldor, like numerous other advocates of non-monetary explanations of the trade cycle, assumes not merely that the monetary authorities either will not or cannot interfere with the forces which he believes to be at work, but tacitly assumes that their non-interference produces precisely that monetary situation which his theory requires."[1] To this I have two observations to make. In the first place, I would not agree that fluctuations in the level of money incomes are a *conditio sine qua non* of the occurrence of the type of fluctuations analysed. As I have tried to show at the end of my paper,[2] given the existence of capital accumulation and imperfect foresight, fluctuations would occur even in a barter-economy or in an economy where the level of money incomes is held constant by careful monetary management. For if the fall in the rate of profit (and the accompanying rise in wages) which results from the accumulation of capital is not sufficiently foreseen, there would inevitably be a tendency to sink too much capital into widening, and too little into deepening, with the result that the consequent fall in profits will be much greater than would be the case otherwise. This in turn would cause (for a time) too much capital to go into deepening. Given static foresight, therefore, the process of capital accumulation would tend to alternate between periods of widening and periods of deepening, with accompanying fluctuations in the level of profits and the rate of wages. In an economy where fluctuations in money incomes occur these tendencies are much intensified, and are

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[1] P. 15 above.

[2] ECONOMICA, February, 1939, p. 64.

accompanied by much greater fluctuations in the general level of output. But the instability of the flow of money is in the nature of an aggravating factor rather than a conditioning factor. In the second place, fluctuations in the level of money incomes which result automatically from the forces at work, could only be ascribed to the " non-interference " of monetary authorities in the sense in which Hitler's occupation of Prague was the result of the " non-interference " of Britain. There is no need to assume any particular type of " non-interference " in order to obtain " precisely the monetary situation required " ; any kind of non-interference will do. It is the policy of successful interference which needs precise definition.

The Theory of Foreign Exchanges[1]

By F. Machlup

PART II

Section IV

19. As long as commodity trade, exchange of services, long-term investments and unilateral payments are treated as the only sources of supply and demand of foreign exchange, as long, therefore, as international movements of gold and short-term balances are excluded, the analysis can be said to deal with "independent currencies".

As soon as international movements of gold (and other monetary metals) and short-term (bank) balances are introduced as sources of supply and demand of foreign exchange, the analysis proceeds to currency systems whose effective circulation is not independent of international transactions. Inflow and outflow of gold, and acquisition and disposal of foreign bank balances, may change the effective monetary circulation of the countries concerned. Institutions which secure that gold and foreign bank balances can be bought and sold at fairly fixed prices, constitute the essence of the gold standard.

Leaving international movements of bank balances for the last step of our analysis, we introduce first international gold movements, and make the assumption that the monetary authorities of both countries are prepared to buy and sell gold at fixed prices or pairs of prices. This assumption, i.e., the assumption of the gold standard maintained in both countries, implies that at a certain exchange rate the supply of foreign exchange becomes infinitely elastic, and at another (somewhat lower) exchange rate, the demand for foreign exchange becomes infinitely elastic.

Under an "orthodox" gold standard system, it is not the monetary authorities themselves which offer to sell or to buy foreign exchange. They buy and sell gold only.[1] On the other hand, the people who wish to make payments abroad are not those who themselves would buy gold from the monetary authorities. The ancient textbook story about the business man who has to make a payment abroad and finds, when the foreign exchange rate rises above a certain point, that it is cheaper to buy gold and ship it to the foreign country, is unrealistic without necessity. It is more correct and no less simple to refer to the gold *arbitrageurs* who buy gold from the monetary authority, ship and sell it abroad, and supply the foreign balances thus obtained to the foreign exchange market. It is, furthermore, easy to understand that this business works under fairly constant marginal cost and that the supply of foreign exchange is infinitely elastic, as soon as the respective rate—the gold export point—is reached, and as long as the monetary authorities in the two countries maintain their preparedness to sell and buy gold at the fixed prices.

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[1] Owing to the war, it has not been possible for Dr. Machlup to correct the proofs of his article—Editor.

For analagous reasons, the gold *arbitrageurs*' demand for foreign exchange is infinitely elastic, as soon as the exchange rate falls to the gold import point. They are willing to buy every amount of foreign balances at this price, since they can use them to buy gold in the foreign country and import and sell it to the monetary authority.

The gold *arbitrageurs* are dealers in gold and foreign balances. In order to postpone movements in foreign balances to the next step of our analysis, we simply assume here that the gold *arbitrageurs* do not change the size of their stocks in foreign exchange. This assumption implies merely that they use any amount of newly obtained foreign balances immediately, either for selling them to final buyers, that is, to people who wish to make foreign payments, or for buying foreign gold to import it. Likewise, they replenish any amount of foreign balances which they have disposed of from their " stock " immediately, either by buying foreign exchange from final sellers, that is, from people who have received payments from abroad, or by buying gold from the monetary authority to export it.

20. An example of the functioning of the foreign exchange market in gold standard countries is illustrated in Fig. 4. It is assumed that initially commodity trade is the only

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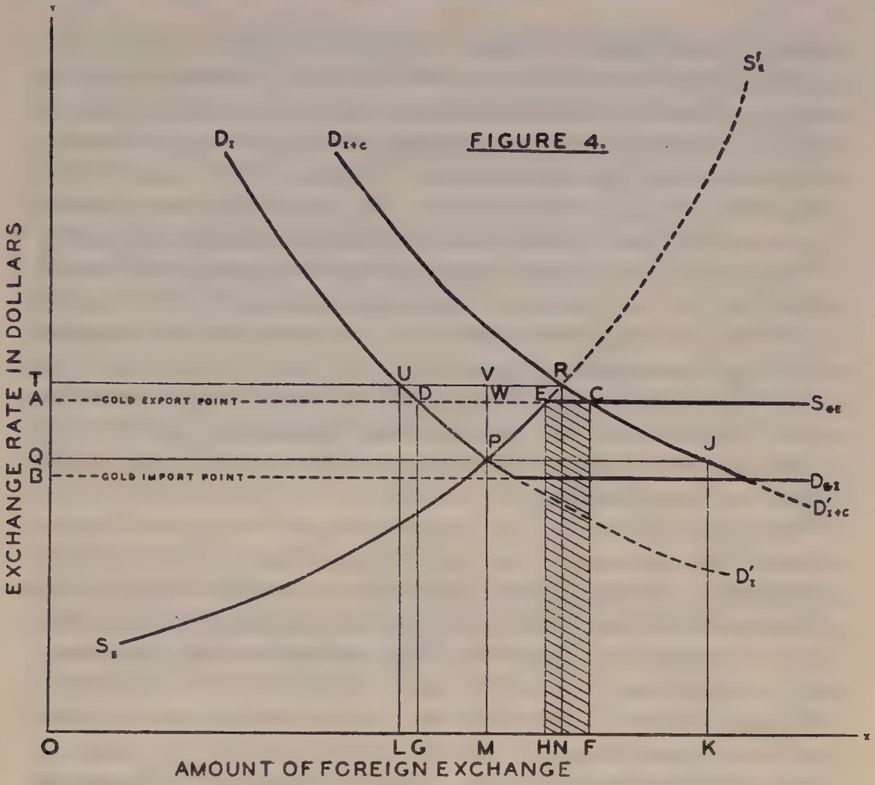
[1] In some gold standard countries, the "modern" system of exchange stabilisation funds was already practiced in the 19th century.



source of international payments. $D_I D'_I$ is the commodity importers' demand for foreign exchange, $S_E S'_E$ the commodity exporters' supply of foreign exchange; *OM* is the amount of foreign exchange bought and sold at the equilibrium rate *MP*. Exports amount to *OM* in terms of foreign currency and to *OMPQ* in terms of dollars; imports are of course equal to exports.

Capital export appears and increases the demand for foreign exchange to $D_{I+C} D'_{I+C}$. We know from previous considerations that the commodity importers' demand for foreign exchange is likely to be affected by changes in the distribution of the income stream which accompany the capital export. However, since we cannot know *how* the import demand will change, we assume it to be unchanged (or we might assume instead that $D_{I+C} D'_{I+C}$ already takes account of all concomitant changes in the demand for foreign exchange).

In absence of the gold standard the foreign exchange would rise to the rate *OT* or *NR*, exports would rise to *ON*, imports would fall to *OL*. Under the gold standard the exchange rate cannot rise to *OT*, which is above the gold export point *OA*. At the exchange rate *OA* the supply of foreign exchange becomes perfectly elastic, the supply curve sharply turning parallel to the *X*-axis. The commodity exporters' supply curve breaks off at *E* and is replaced by the gold exporters' supply curve (S_{GE}) of infinite elasticity.

This supply curve is intersected by the aggregate demand curve ($D_{I+C}D'_{I+C}$) at *C*. The exchange rate *FC* is of course equal to *OA*, the gold export point. At this rate the amount of foreign exchange demanded by capital exporters is *DC* or *GF* and the amount demanded by commodity importers is *AD* or *OG*. Of the total amount demanded, *AC* or *OF*, commodity exporters contribute *AE* or *OH*, and gold exporters contribute *EC* or *HF*.[1]

We see, thus, that the capital export brings with it a decrease in commodity imports ($OG < OM$), an increase in commodity exports ($OH > OM$) and a net gold export (*HF*), all calculated in terms of foreign exchange. Capital export = Fall in commodity imports + Rise in commodity exports + Gold exports, i.e., $GF = GM + MH + HF$.

A calculation in terms of our own currency may, again, lead to different results if the elasticity of the import demand is smaller than unity. In this case imports in terms of dollars would rise rather than fall. In Fig. 4 the importers' demand is, in the relevant range, of an elasticity above unity so that imports fall also in terms of dollars ($OGDA < OMPQ$) when the exchange rate rises from *OQ* to *OA*. The change of the trade balance to an export surplus will be realised in terms of our own as well as in terms of the foreign currency. The commodity export surplus is *GH* in terms of foreign exchange and *GHED* in terms of dollars. Only if the former equilibrium exchange rate had been just at the gold export point, the emergence of a new demand for foreign exchange for capital exports would not directly lead to an export surplus but first merely to gold exports.

For our new situation shown in Fig. 4 the "balance of payments" can be written as follows:

Commodity Exports + Gold exports = Commodity imports + Capital exports, i.e., $OH + HF = OG + GF$ and $OHEA + HFCE = OGDA + GFCD$.

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[1] The repercussions which a concomitant reshuffling in the distribution of purchasing power may have on the original supply and demand conditions are neglected here for the reasons given above in 18 (p. 396).

In the absence of the gold standard commodity exports would be greater (by *HN*) and commodity imports would be smaller (by *LG*) than under the gold standard; the export surplus would be equal to capital exports. The gold standard allows this commodity export surplus to develop more slowly. But develop it will, because the equilibrium pictured above is distinctively unstable.

21. The inherent tendency to change in the situation described above is connected with the destiny of the dollars paid to gold exporters. This money goes another way than the money paid to commodity exporters. Commodity exporters pay the proceeds from their sales (*OHEA* in Fig. 4) chiefly to the producers of export commodities; and the producers pass the money on to producers of intermediate products and to factors of production, etc. Gold exporters, on the other hand, turn the proceeds from their sales of foreign exchange (*HFCE* in Fig. 4 less their commission and transport charges) over to the monetary authorities in payment for gold. Thus most of the money passes out of existence.

Provided no policy of "offsetting" is pursued by the monetary authorities, this contraction of circulation alters not only the distribution but also the amount of money income in a decided direction: money income falls. The fall in money income, in turn, affects demand and supply of foreign exchange in a definite way[1]: the demand, both by commodity importers and by capital exporters, falls, and the supply by commodity exporters rises. That is to say, the demand curves shift to the left, the supply curve to the right.

This increase in supply and decrease in demand may not be sufficient, at the first stroke, to bring the market rate of foreign exchange down below the gold export point. Then another dose of gold exports will further reduce domestic circulation. The income deflation, resulting from a gold outflow without offsetting, cannot help eventually leading to a diminution of demand for foreign exchange and to an increase in the supply of foreign exchange. If the shift in demand and supply curves takes place only after a considerable time lag, then a more complete reversion of the situation is likely to occur: the delayed reduction in importers' demand and increase in exporters' supply

[1] Subjective to qualifications set forth subsequently.

may then, when it finally arrives, push the foreign exchange rate down to the gold import point, thus causing the gold *arbitrageurs*' infinitely elastic demand for foreign exchange to become effective. Gold *arbitrageurs* would pay out to commodity exporters dollars newly created by the monetary authorities in payment for the imported gold, and domestic circulation would rise again.

While the reduction of demand for foreign exchange cannot fail to take place if incomes fall in consequence of a gold outflow, the increase in supply of foreign exchange may, under rather exceptional circumstances, fail to appear. The same "abnormal" conditions which are capable of making for a negative elasticity of the supply curve (see 8) may, in concurrence with other factors, make also for a perverted shift of the supply curve to result from income deflation. To recall it shortly, inelasticity of foreign demand for our export articles and inelasticity of foreign supply of substitutes for our export articles are the conditions in point; conditions which cannot be realised if our exports compete heavily with foreign products, and if we produce goods which are not actually but potentially exportable. The perverted shift is, however, still more "extremely unlikely" than the perverted elasticity, if it is assumed that the gold inflow into the foreign country is not offset there by official sterilisation or private hoarding. With the gold inflow allowed to have its effects on foreign money incomes, *price-elasticity* of foreign demand for our exports can be ever so small without preventing our commodity exporters' supply of foreign exchange from rising, if only the *income-elasticity* of foreign demand for our exports is not negligible. It would be almost absurd to assume that both price-elasticity and income-elasticity of demand are so small that neither higher incomes of foreign buyers nor lower prices charged by our sellers would lead to increased exports measured in terms of foreign currency.

The shift to the right of the foreign demand for our exports, as is known from the famous controversy about the transfer problem of reparation payments, may result in an increase in the commodity exporters' supply of foreign exchange even without any price reductions on the part of our exporters.

22. It may be desirable, at this stage, to summarise in a convenient catalogue all the factors which may concur

in bringing about an export surplus as the result of an export of capital or of any other payment to the foreign country.

1. Domestic purchasing power used for making the remittance may have been withdrawn from buying imported goods; hence the demand for foreign exchange for our commodity imports may fall.
2. Domestic purchasing power used for making the remittance may have been withdrawn from buying exportable goods; hence the supply of foreign exchange from our commodity exports may rise.
3. The foreign exchange rate is raised; hence the amount of foreign exchange demanded for our commodity imports falls.
4. The foreign exchange rate is raised; hence the amount of foreign exchange supplied from our commodity exports may rise.
5. Domestic purchasing power used for buying gold is wiped out; hence the demand for foreign exchange for our commodity imports falls.
6. Domestic purchasing power used for buying gold is wiped out; hence the supply of foreign exchange from our commodity exports may rise.
7. Foreign purchasing power is created through foreign gold purchases; hence the prices of foreign products may rise and the demand for foreign exchange for our commodity imports may fall.
8. Foreign purchasing power is created through foreign gold purchases; hence foreign demand for our exports rises and the supply of foreign exchange from our commodity exports rises.

Factors (1), (2), (3) and (4) can be effective under the gold standard as well as under independent currency systems; factors (5), (6), (7) and (8) can function only under the gold standard. Factors (1), (2), (5), (6), (7) and (8) represent shifts *of* the supply or demand curves, factors (3) and (4) represent shifts *along* the supply and demand curves of the foreign exchange market. Factors (1) and (2) do not function reliably; factors (5) and (6) can function only if no "offsetting" policy, or dishoarding, is at work in the paying country; factors (7) and (8) can function only if no "sterilisation" policy, or hoarding, is at work in the receiving country; factors (4) and (6) may refuse to function under "abnormal" conditions (i.e., factor (4) if the price-elasticities, factor (6) if both price- and income- elasticities of foreign demand for our exports are very small); factor (7) may refuse to function (or may function perversely) if the elasticity of domestic demand for foreign products is smaller than unity. Under normal market conditions and under normal gold standard management factors (3), (4), (5), (6), (7) and (8) can all be expected to function; the more of these forces are at work the less will be the disturbances; the fewer of these forces are at work simultaneously, the heavier may be the possible disturbances connected with a sudden change in the flow of capital or unilateral payments.

It must be mentioned that the "normal gold standard management" mentioned above does not imply the necessity of credit expansion in case of gold inflow, or the necessity of credit restriction in case of gold outflow. In other words, it is not necessary for the functioning of the described mechanisms that monetary circulation increases or decreases by some multiple of the gold in- or out-flow. The "automatic" increase in circulation through a gold purchase by monetary authorities (or banks in general) or the "automatic" decrease in circulation through a gold sale by monetary authorities (or banks in general) are all that is needed—and all that is justifiable on grounds of international equilibrium theory.

23. No change in our analysis is required when we substitute the assumption of a more "modern" gold standard system for the assumption of an orthodox one. We may drop the assumption of legally guaranteed gold sales and purchases by the monetary authorities (to and from gold *arbitrageurs* or the public in general) and substitute the assumption of an Exchange Stabilisation Fund which undertakes to stabilise the foreign exchange rates within relatively narrow margins.

The infinitely elastic demand for foreign exchange was, under the old system, the demand by gold *arbitrageurs* who bought (at the lower gold point) foreign balances in order to import gold and to sell it to the monetary authorities. Under the new system, there is the infinitely elastic demand for foreign exchange on the part of the Exchange Stabilisation Fund, which buys all foreign balances offered at the low point below which the exchange rate is not to be allowed to fall. The infinitely elastic supply of foreign exchange was, under the old system, the supply by gold *arbitrageurs* who sold (at the upper gold point) foreign balances obtained by the export of gold which they bought from the monetary authorities. Under the new system, there is the infinitely elastic supply of foreign exchange by the Exchange Stabilisation Fund, which sells all foreign balances demanded at the upper point above which the exchange rate is not to be allowed to rise.

If the Exchange Stabilisation Fund does not carry varying amounts of foreign balances but rather uses all foreign balances acquired to buy gold, and furnishes all foreign balances needed by selling gold, on the foreign gold market, and if, furthermore, the fund sells the gold it acquires to the central banking system, and buys the gold it needs from the central banking system—then the Exchange Stabilisation Fund is nothing else but a large-scale gold *arbitrageur*, acting exactly as do the gold *arbitrageurs* in our orthodox gold standard case above. The legal framework under which all these actions take place is of small significance from a purely theoretical point of view.

The Exchange Stabilisation Fund may, instead of selling gold to and buying gold from the monetary authorities, keep the gold on its own account (on " inactive account "). In this case we must ask out of what funds of domestic money the foreign balances bought are paid for. The Exchange Stabilisation Fund itself is ordinarily not authorised to create money.

The Fund may have been endowed with a sufficient amount of domestic money—so far back in the past that we need not inquire now whence the money came ; the Fund then " dishoards " (i.e., pays out idle balances) when it acquires gold, and " hoards " (i.e., sets idle the balances received) when it sells gold. If this is so, the analysis holds as laid out in previous sections. Effective domestic circulation is increased, as foreign balances are offered to the Fund, by dishoarding rather than by creating domestic balances ; effective domestic circulation is decreased, as foreign balances are supplied by the Fund, by hoarding rather than by wiping out domestic balances.

The Fund may, on the other hand, not have sufficient working balances in domestic money ; it may obtain the domestic balances, which it needs for purchasing foreign balances offered to it, by borrowing from the banks ; likewise it may use the domestic balances, which it receives for foreign balances sold, to repay its bank debts. In this case we find that our analysis still holds, provided the banks have enough excess reserves (i.e., so high reserve ratios that the banks' supply of credit is infinitely elastic for a certain range). The expansion of bank loans for the purpose of financing the Fund's purchases of foreign balances, and the liquidation of bank loans by means of the proceeds from the Fund's sales of foreign balances, produce precisely the changes in domestic circulation which would result from the working of the "automatic" gold standard.

24. The situation is different if the Exchange Stabilisation Fund finances its purchases by borrowing from the public rather than from the banks, or by borrowing from banks which have no ample provision of excess reserves; and, as to the converse movement, the situation is different from the analysed ones if the Fund uses its sales proceeds for repaying loans to the public rather than banks, or to banks which have been short of excess reserves. In these cases the purchases and sales of foreign balances by the Exchange Stabilisation Fund will not increase and decrease effective circulation by the full value of the foreign balances bought or sold.

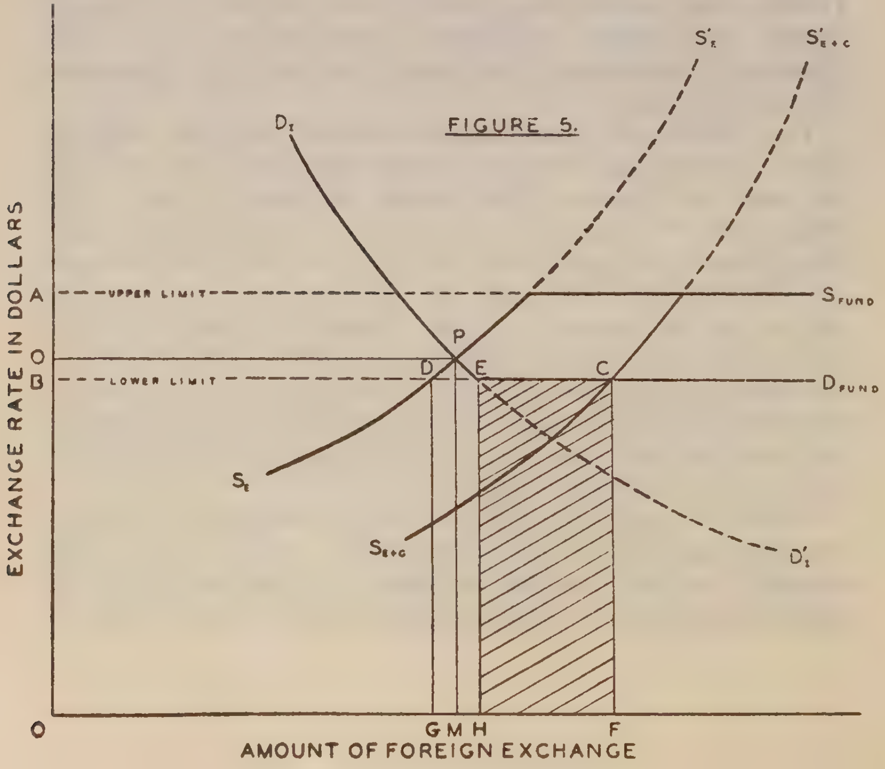
FIGURE 5.

Assume that capital import sets in (Fig. 5) and that the Exchange Stabilisation Fund buys, as is necessary in view of the adopted policy, *HFCE* dollars' worth of foreign balances (or gold), raising the *HFCE* dollars by borrowing from the public. If the public had just become more thrifty and furnished the *HFCE* dollars out of new voluntary savings, then the balances of the savers would be transferred *via* the Exchange Stabilisation Fund to the sellers of foreign exchange, i.e., to the capital importers. Hence no increase in circulation would result from the capital import and the foreign exchange purchases of the Fund.

The assumption of an increase in thriftiness simultaneous with the " favourable balance of payments " is, of course, rather arbitrary. Let us assume instead that the Exchange Stabilisation Fund tries to borrow from a public whose propensities to save have not changed. The total demand for loanable funds increases to the extent to which the infinitely elastic demand for foreign exchange on the part of the Exchange Stabilisation Fund becomes effective (i.e., by *HFCE*). In simpler words, the Funds seeks liquid funds to buy foreign balances or gold, and the money market may become stiffer.[1] Increased interest rates will induce some holders of idle balances to dishoard them : so, while the greater part of the money raised by the Fund will be withdrawn from other employments, a portion will come from hitherto inactive balances. Only a small part of the *HFCE* dollars paid out by the Fund to the sellers of foreign balances will thus constitute an increase in effective circulation. The larger part will constitute active money that merely changes the channels of its flow. That is to say, the gold acquired by the Fund has been " sterilised ".[2]

Much the same result will follow if banks participate in financing the Fund's purchases, but if the banks have no ample excess reserves (i.e., no extraordinarily high ratio of reserves to deposits). In this case some slight net expansion of bank credit may take place under the inducement of increased interest rates, but the bulk of the loans to the Fund (mostly in form of purchases of Treasury bills) will be at the expense of other loans and investments. Only if the supply of bank credit is perfectly elastic, can effective circulation be increased by the full amount which the Exchange Stabilisation Fund borrows in order to finance its perfectly elastic demand for foreign exchange. If the elasticity of supply of bank credit is less than infinity, only a part of the amount borrowed by the Fund constitutes an expansion of monetary circulation.

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[1] About this (temporary) rise in interest rates due to capital imports see below, sub-sections 30 and 31.

[2] It should be recalled that, according to our present assumptions, it makes no difference whether we say that the Fund buys foreign balances or that the Fund buys gold. If the Fund buys foreign balances it is only to use them for gold purchases ; if the Fund buys gold it is (indirectly) using foreign balances.

Vice versa, if a capital export leads to sales of gold (or foreign balances) by the Fund, and if the Fund uses the proceeds from these sales to pay off bank debts (i.e., to buy back Treasury bills), the full amount will disappear from circulation only if the banks have ample excess reserves. But if the banks have been nearly loaned up, they will be able to make other loans and investments when their earning assets and demand deposits diminish through the Funds' repayments.[1] Hence only a part of the amount which the Fund received from the capital exporters and returned to the banks will constitute a contraction of monetary circulation.

Let us look back at our graph Fig. 4 and assume this time that it is the Exchange Stabilisation Fund which provides the amount HF of foreign balances (by selling gold) and receives for them $HFCE$ dollars. Assume, furthermore, that the $HFCE$ dollars are used by the Fund for repaying bank loans, that is to say, for purchasing from the banks $HFCE$ dollars' worth of Treasury bills. The deflationary effect of this transaction depends then chiefly on the elasticity of supply of bank credit. If the banks have been completely loaned up, and their credit supply is of zero elasticity, *none* of the $HFCE$ dollars will be wiped out (except for a negligibly short interval) because the banks have other uses for these funds. (If this implies slightly lower interest rates, a small fraction of the amount might be hoarded under the inducement of the lower interest.) If the banks have had abundant reserves, and their credit supply is of infinite elasticity, *all* of the $HFCE$ dollars will be wiped out. If the supply of bank credit is of more than zero and less than infinite elasticity, the amount of deflation will be between nil and $HFCE$.

It should be mentioned that the effects of capital and gold flow may be completely perverted if capital importers wish to hold inactive bank balances and if capital exporters have been holding inactive bank balances. In these cases, with the supply of bank credit less than perfectly elastic, the inflow of foreign funds may be deflationary and the outflow inflationary.

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[1] Certain qualifications concerning the reverse situation (see below, sub-sections 30 and 31) apply also to this case.

25. Most of the existing Exchange Stabilisation Funds avoid carrying large amounts of foreign balances. They use, as we have assumed so far, foreign balances acquired for buying gold, and they obtain foreign balances needed by selling gold. It might, however, be otherwise. The Stabilisation Funds might be willing to carry any amount of foreign balances. They might increase their " stocks " of foreign exchange by buying, and decrease them by selling. Movements in foreign balances held would then be substituted for international gold movements.

Let us introduce these assumptions to the situations discussed in connection with our graphs Fig. 4 and Fig. 5. No gold is then exported, but the Exchange Stabilisation Fund reduces its holdings in foreign balances by HF (Fig. 4) when it sells foreign exchange to capital exporters. No gold is imported, but the Exchange Stabilisation Fund increases its holdings in foreign balances by HF (Fig. 5) when it buys foreign exchange from capital importers. One change in our conclusions which is certainly called for by the change in assumptions, concerns the balance of international payments.

In 20 we stated that the capital export (GF of Fig. 4) was equal to a fall in commodity imports (GM) plus a rise in commodity exports (MH) plus a net export of gold (HF), all calculated in terms of foreign exchange. Now, under the changed assumptions, we have to state that the capital export (GF) is equal to a fall in commodity imports (GM) plus a rise in commodity exports (MH) plus a net reduction in foreign short-term balances (HF). A reduction of balances due from foreign banks is, of course, a repayment of debts by foreigners, and thus, in technical language, a movement of short-term capital from the foreign country to our country. We arrive therefore at this restatement regarding the changes in international transactions :

Long-term Capital export = Fall in commodity imports + Rise in commodity exports + Short-term capital import, i.e., $GF = GM + MH + HF$.

The balance of payments for the period during which

the curves remain unchanged as in Fig. 4 reads now as follows :
Commodity exports + Short-term capital import = Commodity imports + Long-term capital export, i.e., $OH+HF=OG+GF$, and $OHEA+HFCE=OGDA+GFCD$.

That this cannot be a position of stable equilibrium is clear. It is not necessary to prove this by referring to the fact that the stocks of foreign short-term balances must be exhausted sooner or later, just as it was not necessary to prove the instability of the gold export situation by referring to the limited gold stock. What makes for the instability of this temporary equilibrium is the deflationary effect of the "short-term capital import". This short-term capital import is a not very descriptive term for the underlying phenomenon: the disposal of balances held with foreign banks by the Exchange Stabilisation Fund.

The extent of the deflationary effect depends, as shown before, on the use which the Fund makes of the proceeds from the sale of foreign exchange. The deflationary effect causes eventually the supply curve of foreign exchange to shift to the right and the demand curves to shift to the left. The stable equilibrium[1] of the balance of international payments will then show (increased) commodity exports equal to (decreased) commodity imports plus (decreased) long-term capital exports.

The discussion of the converse case, that of long-term capital imports, can be brief. The provisional change in the balance of payments as shown in Fig. 5 would be this: Long-term capital import = Fall in commodity exports + Rise in commodity imports + Short-term capital export, i.e., $GF=GM+MH+HF$. The "short-term capital export" of this balance is, of course, nothing else but the purchase of foreign exchange, or more concretely, of foreign bank balances by the Exchange Stabilisation Fund. By acquiring claims against foreign banks the Fund "exports" short-term capital which takes up a part of the import of long-term capital. "Export of short-term capital" is again not a very descriptive term for the phenomenon designated, i.e., for the purchase by the Fund of balances with foreign banks.

This transaction has an inflationary effect, the extent of which will depend on the methods employed in financing the Fund's purchases of foreign exchange. The inflationary effect will cause a decline in the supply of foreign exchange, both from commodity exports and capital imports, and an increase in the demand for foreign exchange for commodity imports. The result of these shifts will be a stable equilibrium with (increased) commodity imports equal to (decreased) commodity exports plus (decreased) long-term capital imports.

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[1] "Stable" describes this equilibrium position only if the capital export is regarded as a *datum* for our problem. From another point of view the incentive to export capital diminishes, of course, as the cumulative sums exported grow.

SECTION V

26. In all the preceding sections, since we dropped the assumption of independent currency systems, we have carried on our analysis on the assumption of organised exchange rate stabilisation. This stabilisation of foreign exchange rates was first (19–22) the result of an " orthodox " gold standard system with legally guaranteed gold sales and purchases ; later (23–25) it was the result of a " modern " gold standard system with sales and purchases of gold or foreign balances by an Exchange Stabilisation Fund.

To drop the assumption of organised exchange stabilisation is not equivalent to returning to the assumption of flexible exchange rates or, still less, to returning to the assumption of independent currencies. Exchange stabilisation, firstly, may be the result of persistent pegging by commercial banks and foreign exchange dealers. Secondly, movements in foreign short-term balances, whether the exchange rate is fixed or flexible, involve ordinarily changes in the monetary circulation, thus removing the criterion of an " independent " currency.

Persistent pegging by commercial banks and foreign exchange dealers could be motivated by open or tacit agreements among them, or by their general belief in the permanence of the value of the currencies, or, most plausibly, by their confidence in the existence of some organised stabilisation scheme or in some latent stabilisation policy of the monetary authorities. The last of these motives may render it possible that the actual stabilisation of the exchange rates is achieved through the stabilising purchases and sales of foreign balances by commercial banks and dealers without the existing (or only imagined) official stabilisation machinery ever being put into operation.

The range over which the demand for foreign exchange at a certain low rate, and the supply of foreign exchange at a certain high rate, are perfectly elastic is, of course, smaller if this demand and supply are thus based solely on the voluntary pegging activities of commercial banks and dealers. If the monetary authorities stand behind the voluntary pegging in that they offer their ever ready organised stabilisation machinery (orthodox or modern), then we may interpret the infinite elasticities of demand and supply of foreign exchange as resulting, for a certain range, from private pegging and, for another range, from official stabilising. In absence of effective organised stabilisation the supply curve would resume its usual upward direction, and the demand curve would resume its usual downward direction, once the readiness or the forces of private pegging are exhausted. Private pegging would have exhausted its power to supply foreign exchange, when all the holdings in foreign balances had been disposed of and new foreign credit could be had only at increased cost. Private pegging would have exhausted its power to demand foreign exchange, when the institutional limits of credit

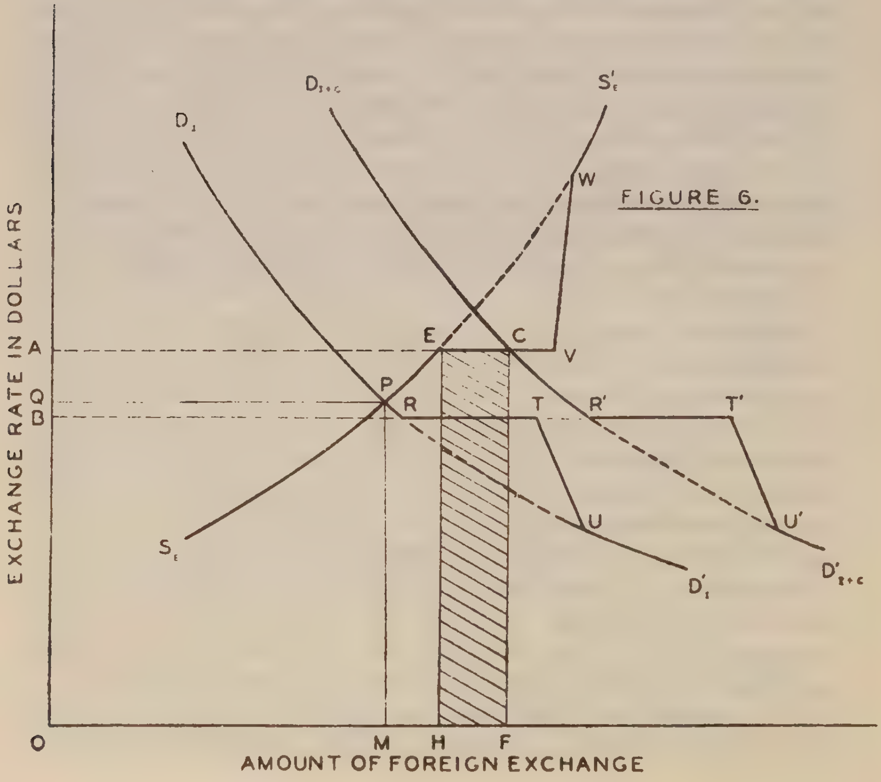

FIGURE 6.

expansion had been reached and domestic funds could be raised only at increased cost. Fig. 6 depicts this situation.[1]

It is, however, quite possible that the range over which private pegging can effectively secure perfect elasticities of supply and demand at a pair of exchange rates is large enough for most practical situations. (In Fig. 6 the supply by dealers is sufficient to meet the increase in demand.) This will be more probable the more inflationary and deflationary are the effects of foreign exchange purchases and sales by the pegging banks and dealers. For, if these purchases of foreign balances increase domestic circulation and if these sales of foreign balances decrease domestic circulation, then the " correcting " shifts of market supply and demand curves take place before the forces of private pegging are exhausted. We should examine, therefore, the extent to which purchases and sales of foreign exchange by commercial banks and dealers affect the monetary circulations of the countries.

27. If it is commercial banks that do the pegging of exchange rates, then it is obvious that their purchases immediately increase, and their sales immediately decrease monetary circulation (i.e., check deposits). The only question is whether or not their purchases of foreign balances prevent them from acquiring other assets, and whether or not their sales of foreign balances give them occasion for the acquisition of other assets. If the purchase of foreign exchange prevents the banks from making loans which they otherwise would have made, then the purchase cannot be said to cause a net expansion of monetary circulation. And if the sale of foreign exchange gives the banks occasion to acquire

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[1] Fig. 6 shows that dealers would be willing to sell an amount EV of foreign exchange before the exchange rate could rise above OA, and that dealers would be willing to buy an amount RT (or $R'T'$) of foreign exchange before the exchange rate could fall below OB. The combined demand curve (of importers and dealers) is $D_I RTUD'_I$, the combined supply curve (of exporters and dealers) is $S_E EVWS'_E$.

If the appearance of a demand for foreign exchange for purposes of capital export raises the aggregate demand for foreign exchange from $D_I D'_I$ to $D_{I+C} D'_{I+C}$, the exchange rate rises from OQ to OA and dealers sell EC from their holdings of foreign balances. They receive $HFCE$ dollars from the capital exporters.

The graph is, however, open to objections on methodological grounds. Firstly, the assumptions concerning expectations of future exchange rate changes are of one type in the case of the exporters' and importers' supply and demand, and of a totally different type in the case of the dealers' supply and demand. This problem will be alluded to later on in 33. Secondly, the exporters' and importers' supply and demand refer to a *flow* of foreign exchange (e.g., exporters sell AE per month) whereas the dealers' supply and demand refer to a *stock* of foreign exchange (e.g., dealers sell EC in the first month but would not sell more than EV in the aggregate). The combination of all these curves and parts of curves in one graph is, I believe, legitimate for a short period (e.g., for the *period* of one month if the other curves represent *rates* per month).

other assets which they otherwise would not have acquired, then the sale cannot be said to result in a net contraction of monetary circulation. Is this likely to be the case?

The answer depends on two circumstances: first, on the flexibility of the banks' ratios between reserves and deposits, and on the flexibility of their "borrowed reserves"; second, on whether foreign balances are counted among the reserves. If foreign balances are counted as reserves, the inflationary effects of their acquisition and the deflationary effects of their disposal are beyond doubt; indeed, these effects are magnified because even secondary expansions and restrictions of credit may be induced by these "changes in reserves". In the United States the law confines the concept of reserves of member banks to balances held with the Federal Reserve banks; foreign balances, therefore, are no reserve; their acquisition, by creating demand deposits, reduces the reserve ratio, and their sale, by wiping out demand deposits, raises the reserve ratio. Hence, in the United States, it is the first of the above-mentioned circumstances which determines our question.

If the ratio of reserves to deposits were absolutely constant, purchases of foreign balances by commercial banks would be at the expense of other loans and investments, unless the banks borrow from the central banks. The member banks which are "loaned up" but wish to purchase foreign balances and to hold them until foreign exchange rates rise from their low level, can do so only if they have a part of their bill-portfolio rediscounted or a part of their investment-portfolio taken over by the Reserve banks. If the banks are not "loaned up" but have a high reserve ratio (i.e., high excess reserves) and are willing to see the reserve ratio reduced, they can buy and carry foreign balances without obstacles. Hence, flexibility of the reserve ratio or flexibility of the amount of reserves are the conditions which make for inflationary effects of foreign exchange purchases by commercial banks.

Likewise, sales of foreign exchange by commercial banks are deflationary, if the banks are willing to see their reserve ratio (i.e., their excess reserves) increased or if they have a part of their reserves "borrowed" and can now repay them. If none of their reserves were borrowed and the reserve ratio were to be kept constant, so that the banks would have to acquire immediately other assets as soon as they sell foreign balances, then no deflationary effects would ensue from these sales.

Looking at present-day practice we find that the reserve ratios of member banks are sufficiently flexible to allow exchange purchases and sales by commercial banks to have inflationary and deflationary effects.

28. If not banks but private dealers are engaged in foreign exchange pegging, we have to ask what funds are used by these dealers for their purchases of foreign balances. If they use borrowed funds and arrange for bank loans in order to purchase foreign exchange, and repay bank loans when they sell foreign exchange, then the situation is almost the same as described before. The banks acquire the foreign exchange dealers' bills instead of the foreign exchange directly. The banks' bill-portfolio rises when the dealers buy and falls when the dealers sell foreign balances.

Had the dealers the habit of disbursing and accumulating idle balances whenever they bought and sold foreign exchange, the inflationary and deflationary effects would be a matter of dishoarding and hoarding (and would show through velocity, rather than volume, of circulation). If neither idle dealers' balances nor created bank funds were available for the dealers' purchases so that the necessary funds would have to be sought on the open market from non-banking sources, then the inflationary effect of their purchases would be trivial: it would be confined to the dishoarding induced by slightly increased interest rates. Likewise, the deflationary effect of dealers' sales of foreign exchange would be confined to the hoarding induced by slightly reduced interest rates, if the dealers had no bank funds but only private business funds borrowed for carrying their foreign balances.

The more common practice is certainly that the dealers finance their transactions through bank loans. Hence, again, the conclusion seems warranted that dealers' purchases of foreign balances have the inflationary effects, and dealers' sales of foreign balances have the deflationary effects, which we have discussed several times; so that the effects of ordinary transactions by foreign exchange dealers approach the effects of the gold movements under an orthodox gold standard.

The sharp line which many writers have drawn between the international gold standard and other monetary systems proves to be without justification from a purely economic point of view. The time-honoured theory of foreign exchange under the gold standard has, for example, a more appropriate application to a case of legally flexible exchanges where speculators sell foreign balances and repay debts to highly liquid banks, than it has to a case of a legally simon-pure gold standard where the central bank sells gold but allows at the same time commercial bank deposits to remain unchanged.

29. Contemporary writers on the subject have expressed the view that movements of foreign short-term bank balances " differ radically " from international gold movements as far as their effects on incomes and prices are concerned. This view is correct only if writers think of the *secondary* expansions and restrictions that are invited by gold movements under the fractional reserve system: a movement of a certain amount of gold might call forth a multiple amount of bank credit creation in the one country, and a multiple amount of bank credit destruction in the other. We said, however, above (in 22) that the secondary creation and destruction of bank credit is neither necessary nor even justifiable from the point of view of international equilibrium theory. From this point of view we consider as an essential part of the mechanism only that " transfer " of purchasing power which is equivalent in amount to the international payment which gives rise to it.

If it is, thus, not expected that a certain gold flow wipes out in the one country and creates in the other country, more than an equivalent amount of purchasing power, then it makes, in principle, little difference whether gold flows or whether bank balances move. To return to our example of Fig. 4, the flow of gold is expected to reduce circulation in the paying country by *HFCE* dollars and to increase circulation in the receiving country by *HF* units of its currency. Assume now that no gold is exported but that the amount *HF* of foreign balances is bought (by capital exporters) from domestic banks. In the paying country *HFCE* dollars of domestic bank deposits are wiped out through this transaction. In the receiving country *HF* units of its currency are transferred from the idle accounts of foreign banks to the (probably) active account of the persons from whom the capital exporter buys securities. The amount wiped out in the one country corresponds to the amount which is " activated " in the other country.

The deflationary effect in the paying country takes place, in this case, through a reduction in the volume of circulation ; the inflationary effect in the receiving country takes place through an increase in the velocity of circulation.

In which country the amount and in which country the velocity of bank deposits change depends on the method of payment. One might send a check drawn on a bank in one's own country (i.e., a dollar check) and the foreign bank to which the payee sells the check may then carry an increased dollar deposit. In this case V' changes in our country while M' changes in the foreign country. On the other hand, one might buy, as in the previous example, from one's bank a draft on a foreign bank which the payee abroad deposits in his bank account. In this case M' changes in our country while V' changes in the foreign country.

To employ on Fig. 5 once more, we see that foreign bank checks in the amount of HF units of the foreign currency may be sold to our banks. Our banks thus create $HFCE$ dollars of new deposits. In the foreign country the amount of HF units of its currency is transferred from the probably active accounts of the remitters to the idle accounts of our banks which buy the foreign checks from the payees. This time, the deflationary effect in the paying country takes place through a reduction in velocity of circulation ; the inflationary effect in the receiving country takes place through an increase in the volume of circulation.

30. One important difference between exchange stabilisation by central banks (or with central bank funds) and exchange stabilisation without central bank funds bears on the rate of interest. If central banks buy foreign exchange or gold, the reserves of member banks are increased. The same is true if an Exchange Stabilisation Fund buys foreign exchange and obtains the necessary means from the central bank, for instance through the issue of gold certificates. The ensuing increase in excess reserves of banks and in the liquid balances of firms and individuals has the tendency to ease the money market and to lower interest rates.

If, on the other hand, commercial banks buy foreign exchange, or if dealers and speculators buy foreign exchange with funds borrowed from commercial banks or in general on the money market, the excess reserves of banks and the liquid balances of firms and individuals are reduced. The same is true if an Exchange Stabilisation Fund buys foreign exchange and obtains the necessary means by borrowing from commercial banks or on the open market, for instance, through the issue of Treasury bills. Except in the case of an infinitely elastic supply of bank credit, a tendency to stiffen the money market and to raise interest rates is the result of the inflow of foreign payments.

The reverse, of course, is true for an outflow of gold or foreign exchange. If central bank funds are liquidated by the outflow, excess reserves and liquid balances are reduced. If commercial bank funds or private funds are liquidated by the outflow of foreign exchange, excess reserves and liquid balances are increased. A tendency towards higher interest rates follows from the former situation, a tendency towards lower interest rates may follow from the latter situation.

Thus, if no central bank funds are engaged in exchange stabilisation transactions, a flow of capital may lead to temporarily reduced interest rates in the country from which the capital is withdrawn, or to temporarily increased interest rates in the country to which the capital is sent. This sounds paradoxical but it is nevertheless true. If we imagine that English capitalists buy American securities we invariably associate with this the idea that interest rates in the American markets are reduced. According to our customary reasoning, the transaction involves an increased demand for American securities, hence increased security prices which are equivalent to reduced long-term interest rates. Yet this reasoning is valid (abstracting from changed expectations on the part of domestic investors) only if the supply of pound sterling in New York (or demand for dollars in London) leads to a purchase of the pound sterling or of gold by the American monetary authorities and to a creation of American excess reserves and liquid balances. It is different if the Exchange Stabilisation Fund, pursuing a policy of offsetting, has first to raise on the open market the dollars with which to buy the pound sterling, before the English capitalist can buy American securities; or, similarly, if an American dealer or speculator has first to borrow dollars with which to take over the pound sterling, before the increased demand for securities can become effective. In these cases an increased demand for investible funds precedes the increased demand for securities; the demand for securities is thus nothing but the (immediate) re-supply of the investible funds raised by the buyers of foreign balances.

31. A simplified picture of this situation can be gained by the following description: an English capitalist desires to hold American securities and offers English bank balances. By offering the English balances at a low dollar price, he makes an American dealer desire to hold English bank balances and offer his promissory notes. By offering promissory notes at a reduced price, i.e., at a higher discount —it is assumed that the supply of bank credit is not perfectly elastic—the dealer makes an American investor desire to hold promissory notes instead of securities, and instead of idle cash. So the American investor will get the foreign exchange dealers' promissory notes, the English capitalist will get the American securities formerly held by the American investor, and the foreign exchange dealer will get the English balances from the English capitalist. Since the impulse to these transactions starts with the offer from the English capitalist and is continued by the offer from the foreign exchange dealer, the prices of pound sterling balances and of promissory notes have to recede. The decline in the price of promissory notes is, of course, identical with an increase in the short-term rate of interest.

In the absence of frictions the increased demand, and higher interest rate, for liquid funds would make the holder of both securities and cash balances desire to switch some of his securities and some of his liquid balances into holdings of short-term credit instruments. Frictions of psychological and institutional nature, however, will often arrest any tendency towards security selling, and turn the whole impulse into dishoarding and bank credit expansion. But inasmuch as the supply of bank loans is less than perfectly elastic the increase in short-term interest rates is sustained.

Security prices did not have to fall (or only a trifle or for only a short period) in the foregoing example, partly because of the induced dishoarding and credit creation; chiefly, however, because the possibly increased willingness to part with securities on the side of American investors, which was prompted by the attractive terms for short-term loans, was met by the increased demand for American securities by the English capitalists. If, however, the increased supply of English balances (or gold) had been due not to increased English capital exports to the United

States but to increased English commodity imports from the United States, or to any other English payments to the United States, then American security prices might have receded more noticeably. The supply of English balances would have, as in the other case, led to an increased demand for American short-term funds by the buyers of the cheap English balances (foreign exchange dealers, speculators, or the Exchange Stabilisation Fund) without these funds being used afterwards for the purchase of the securities offered by American investors. The funds would have gone to those who had to receive payments from the foreign remitters, for instance, to American commodity exporters.

It is thus clear that a rise in interest rates may result from a so-called favourable balance of payments if the increased supply of foreign balances (or gold) is purchased out of funds other than newly created central bank money. Conversely, a fall in interest rates may result from a so-called adverse balance of payments if the increased demand for foreign balances (or gold) is satisfied by sales which liquidate funds of individuals, firms and commercial banks instead of wiping out central bank money.

A qualification is in order concerning the situation in which the supply of commercial bank credit is perfectly elastic. In this situation, of course, short-term interest rates would neither fall nor rise. This would be, therefore, the intermediate case between that where central bank funds are created and wiped out, and that where other funds are employed and released, when foreign balances are acquired and disposed of.

32. Organised exchange stabilisation and private pegging (based chiefly on a *belief* in the existence of a stabilisation policy) have allowed us to assume a supply and demand of foreign exchange from those who are willing to draw on, and to add to, their existing foreign balances. In absence of any definite policy of the monetary authorities and of any definite expectations concerning such a policy, supply and demand of foreign exchange from those who are willing to draw on, and to add to, their existing foreign balances, is absolutely indeterminate; that is to say, their supply and demand is based on ever-changing expectations which make the respective supply and demand curves shift so rapidly, erratically or unpredictably that it becomes

meaningless to "assume" any such supply and demand curves even in a short-period analysis.

In the absence of any definite policy of the authorities (i.e., when the policy is indefinite even for the shortest period), the least illegitimate assumption will be that over a longer period of time nobody will want to carry an appreciably increased or decreased amount of foreign (credit or debit) balances. This assumption implies that the analysis of the foreign exchange market is reduced again to the other (less erratic) sources of supply and demand such as commodity trade, exchange of services, regular payments, etc. "Speculation" may then at any moment result in a somewhat different exchange rate than would follow from the other factors in the market, but it cannot lead to perpetually one-sided deviations of the actual rate from the "equilibrium-rate". This follows logically from our assumptions: if speculation has a persistent influence in a certain direction, then speculation is based on definite expectations and allows us to assume the shape of the respective supply or demand of foreign balances. If, on the other hand, speculation is erratic, so that none of the foreign credit balances acquired for speculative purposes are held for a long time, and none of the foreign debit balances arranged for speculative purposes are left unsettled for a long time, then speculation has no lasting net-influence on the foreign exchange rate.

33. Expectations concerning future changes of the foreign exchange rate shape supply and demand of those who are willing to draw on, and add to, their foreign balances (banks, dealers, speculators). But expectations as to future rate changes may enter also into the determination of supply and demand of other groups. Commodity importers will have an increased demand for foreign exchange when they expect a rise in the foreign exchange rates,[1] and a decreased demand when they expect a fall. Commodity exporters' supply of foreign exchange will decrease when a rise in foreign exchange rates is expected, and increase when a fall is expected. These changes in supply and demand would not be due to *direct* speculation in foreign exchanges; if they were, the respective transactions would have to be included in the supply and demand of those who sell foreign

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[1] Foreign exchange rates are assumed to be expressed in terms of the amount of domestic currency exchanged per unit of foreign currency.—Editor.

balances which they have held, and buy foreign balances which they will carry. The demand for foreign exchange by commodity importers (in their capacity as commodity importers) rises because they actually intend to import more at the time being when they expect that later the imported goods would cost them more and would sell higher. In a sense they speculate in goods, not in exchange.

The importers *qua* importers do not increase their holdings of foreign balances but they increase their commodity stocks. And when they expect a fall in exchange rates, they do not sell foreign balances but they diminish their commodity stocks by postponing further import orders.

An actual rise or fall in exchange rates may cause principally three types of anticipations: (1) that the exchange rates will rise or fall still further; (2) that the exchange rates will fall or rise again to their former level; (3) that the exchange rates will remain at their new level. Only the last type of anticipation is fully consistent with the usual assumptions under which supply and demand curves (of final sellers and final buyers) are drawn. If a fall or rise in exchange rates arouses expectations of type (1) or (2), this is usually depicted by a shift of the supply and demand curves. Should now *every* change in the exchange rates give rise to some unpredictable change in expectations of type (1) and (2), then short-run analysis of the usual type would break down completely. The changes in expectations would cause the whole curves to shift as often as the rate changes; hence shifts *along* the old curves (and, thus, elasticities) would become irrelevant.

Short-run analysis becomes thus impossible if rapid, erratic and unpredictable changes in expectations make almost everybody a speculator. Theoretical analysis is then more or less confined to the long period; and it loses, of course, some of its significance: its immediate applicability to currently observable facts is gone.

Changes in expectations are, by and large, eliminated as determining factors in long-period analysis. The postponement or advancing of orders by buyers, as well as the withholding or pressure-selling by sellers, are supposed to cancel out in the long run. In long-period analysis the complications introduced by erratic changes of expectations are avoided, although several qualifications would have to be added to the statements of a long-run theory of the foreign exchange market. We shall not expatiate here on these problems.

34. One of the most naïve misunderstandings in the theory of foreign exchanges is the idea that the balance of international payments shows the supply and demand of foreign exchange and can explain the movements of the foreign exchange rates observed in the market. Where this idea errs can be best seen by recalling something we were taught in first-year economics.

If 125 quarts of strawberries were sold at a price of 24 cents we know that 125 quarts were demanded and 125 quarts were supplied at 24 cents, but we know neither the demand nor the supply of strawberries. If during the next period 125 quarts are sold at a price of 22 cents, we do not know whether the demand for strawberries has decreased (with a perfectly inelastic supply), or whether the supply of strawberries has increased (with a perfectly inelastic demand), or whether both a decrease in demand and an increase in supply have concurred in bringing about the result. The matter is fundamentally the same if quantities change rather than prices, or if both change. Every teacher of economics is apt to become impatient when a student confuses demand with quantity demanded and supply with quantity supplied.

The balance of international payments can never show more than one point on the demand and supply curves; but even this is not true if one looks at the balance of payments for any given year, because the transactions during a period of a year may be the result of several changes in the supply and demand situation. And if the statistics show that imports have increased from one year to the next, this does not tell whether the increase in imports was brought about in consequence of an increase in the demand for imports, or in spite of a decrease in the demand for imports, or with an unchanged demand for imports, etc. The balance of international payments does not reveal which of the changes were "spontaneous" and which were "induced", either directly by changes in the exchange rate or more indirectly by the effects upon circulation of other items in the balance.

An attempt at analysing the foreign exchange market with the tools and in the terminology of general price theory helps in avoiding pitfalls into which one is easily led by the often confusing terminology in which foreign trade and foreign exchange theory is usually treated.

A Spanish Contribution to the Theory of Fluctuations

By D. H. Robertson

I

Some sixteen years ago I received from the author, German Bernacer, then of the School of Commerce, Alicante, a pamphlet in Spanish entitled *La teoria de las disponibilidades, como interpretacion de las crisis economicas y del problema social* (Barcelona, 1923). I read, as I now think with insufficient attention, the type-written summary in French by which the pamphlet was accompanied; though indeed it seems possible that I gave it subconsciously more attention than I knew, for there is evidently a family resemblance between the "successive period" method of analysis employed by Señor Bernacer (see II, 3 below) and that which I employed a little later in my *Banking Policy and the Price Level.* From time to time, at successive cleansings of the Augean stable, the documents have worked their way again to the surface; and on re-reading recently the French summary it appeared to me to have become, in the light of recent controversies, more interesting than I had previously supposed.

My attempts in recent months to establish personal contact with Señor Bernacer have been in vain; and I propose therefore to give a summary of his pamphlet, with copious extracts from what seem to me its most interesting sections, and to offer a few comments on it. If, as I hope, he is still living and this journal meets his eye, I trust he will give his retrospective permission—and claim such modest reward as Economica is able to offer its contributors!

I have been much assisted by a translation made for me by Mr. Josué Sáenz. Two expressions give rise to especial difficulty—the key-word *disponibilidades*, which I have rendered by "disposable funds", and the phrase *valores de renta*, which I have rendered by "income-yielding assets".

This latter rendering, however, does not convey the full flavour of *functionlessness* which I take to hang about the original.

II

1. The term " disposable funds " is familiar in financial circles ; but it remains for economic science to give precision to the concept. Money is evidently the most " disposable " of all assets, since all other assets have to be turned into money before they can be used to exercise a claim on society. But not all money is equally disposable. " To sum up, the disposable funds which consist of money can be classified into three grades—(1) Incomes derived from production, which form the normal receipts of consumers, whether or not directly engaged in production, and are in general devoted to meeting their customary needs (minimum disposability). (2) Stocks of money in the hands of industrialists, traders, bankers and speculators, which form the monetary fund required for the conduct of their enterprises, and could not be withdrawn without great loss and the liquidation of these enterprises (relative or average disposability). (3) The surplus of recent incomes or gains over personal expenditure—recently formed savings which their owners do not intend to devote to ordinary expenditure and which are not capable of useful or remunerative employment (absolute or maximum disposability). For the purpose of our investigation it is especially convenient to distinguish the last two types of disposable funds from the first. Whenever we speak simply of ' disposable funds ' we shall mean those of the second and third types, while when we wish to designate those of the first type we shall call them ' incomes '."

2. " To what uses can a volume of disposable funds be turned ? . . . It can be used to acquire things which yield an income, such as Government securities, real estate, industrial shares, going concerns : or it can be lent to persons who are willing to pay interest at least as high as that which can be obtained in any other use offering equivalent security. In such cases people expect to derive from their savings a return. Again it can be used to buy one of those things which we have just mentioned, or commodities, or the right to the use of some facility, which we hope to re-sell or part with at a higher price. In this case the profits depend on

the fruit of a speculation. Finally there is the possibility of using money to make something useful to others, or to perform a service for which people are ready to recompense the effort, the anxiety and the capital involved. Such is the case of setting up and carrying on a factory, founding a business, constructing a building or developing any other enterprise which entails a demand for goods which must be reproduced or replaced in the course of production, and for labour and machines to transform them. In this case, the money lying in disposable funds is converted into wages, salaries, interest, rents, profits and in general into the incomes of those who work or collaborate, for the account of the entrepreneur, in the creation of additional output, which no longer represents a disposable fund.

" The economic effects of disposable wealth depend naturally on the use to which it is put. . . . The sale of an asset is a transference of disposable funds from buyer to seller ; in the hands of the latter, money preserves the same character as it had in the hands of the buyer—a *potential* character representing the possibility of demanding a certain total of goods or services not yet in concrete form ; its effect on the market for goods is null and unpredictable until the holder decides the use to which it shall be put. The same thing occurs in the case of a loan . . . its effect depends on the use made of it by the recipient. . . . If he is an industrialist, the disposable funds will be resolved into demand for raw materials and machinery, into wages, interest on capital, etc. But so long as this does not occur, the simple transference of the control of disposable funds . . . does not alter their function or nature. They represent a potential economic force, a reserve element occupied in speculation or lending, whose economic function is confined on the one hand to maintaining in equilibrium the prices of securities, goods at wholesale and everything which can be the object of speculation, on the other to equilibrating and determining the relative returns from the various uses of capital.

" This merits closer consideration, for it explains the conditions of equilibrium of many economic indices. Let us suppose that the volume of disposable funds existing in the market increases relatively to the goods which may be the object of speculation and to the sums which are demanded by way of loan. In this case, through the operation of the classical law of supply and demand, the prices of the objects of speculation, which include land and stock exchange securities, will rise. Now the price of income-yielding assets is bound to their relative yields. If their price rises, without any increase in their productiveness, the relative yield will be smaller; and those who possess disposable funds and wish to give them employment will avoid exchanging them for low-yielding assets. Conversely an increase in the yield of assets of variable yield, such as land, industrial shares, etc., will render them more attractive because of their greater relative profitability. Disposable funds will therefore flock to them and push up their prices, abandoning the less lucrative occupations and causing there a depression of prices which will bring the relative yields into equilibrium.

" In this way a certain equilibrium will be established between the volume of disposable funds demanding income-yielding assets and the quantity of each of these offered in the market. This relation will fix the relative yield, or the current price of a unit of yield.[1] This is indeed the cause of what is ordinarily called the rate of interest. While the latter arises out of the possibility of using disposable funds for the purchase of income-yielding assets, it reacts later upon all other uses of these funds, for they will be attracted to a particular use only when they find therein a return at least equal to that in other equally safe uses. At the same time they will abandon the less favourable uses until their scarcity there causes a rise in the relative yield of the latter, either through a decrease in their market price or because the necessity of attracting disposable funds induces an adequate increase in the profits offered.[2]

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[1] "It is obvious that the price of a unit of yield is simply the reciprocal of the rate of interest. Interest at 5 per cent. means that a unit of annual income can be bought for twenty units of capital. For those who are familiar with the current form of the theory of prices, it is not difficult to understand how the price of a unit of yield is determined. For each price there is a certain number of holders of income-yielding assets who are willing to sell; this number naturally increases as the price rises. On the other hand, the number of owners of disposable funds who decide to buy decreases as the price rises: for the transaction becomes progressively less advantageous. There will be one price, and one only, at which at any moment there will be an ideal correspondence between supply and demand; and the price will continually tend towards this point. If at any moment there are many securities and properties for sale and few buyers, this indicates that the ideal equilibrium price is below the ruling price, and the latter will tend to fall to seek the former." And conversely.

[2] "This is certainly not the opinion about the origin of interest dominant in economic science to-day, but the generally accepted opinion does not bear serious analysis, which it would be too great a digression to conduct here. The doctrine here maintained seems to me more rational and fruitful."

" The case of a loan is similar. The borrower tries to obtain the best possible terms, but should he offer less than the holders of disposable funds can get by purchasing income-yielding assets at the market rate, it is evident that he will not obtain the loan. . . . Loans are not in themselves the cause of interest on capital. The interest on a loan is a reflex phenomenon of the yield produced by certain assets exchangeable for money. Since these assets, with the exception of land, proceed in turn from loans, it must be concluded that the primary origin of the phenomenon of interest is to be sought in the rent of land and in the exchangeability of this asset for others. And just as money is not lent without interest, so it is not put to any other use, whether productive or speculative, without a proportionate return."

Speculation in commodities or securities yields a differential return above the true rate of interest, sufficient to compensate for the risk and trouble involved.

" Lending, speculation or the purchase of securities does not alter the objective character of disposable funds, which remain disposable in the hands of their recipients ; but their employment in industry does give rise to an evident change in their condition. They are then devoted to the payment of wages, interest, rent, etc., that is to say they pass on to become incomes. From a state of maximum or average disposability they are transferred into one of minimum disposability, since they come to form the normal income of a number of individuals, devoted in general to the satisfaction of immediate wants and thus creating a new demand for necessaries, comforts and amenities. Thus they are once again reconstituted as true disposable funds in the hands of the sellers of those goods, who in realising their sale recover the disposable funds invested in them by way of speculation, together with the profit which constitutes their trading income.

" There is always a certain sum of disposable funds undergoing transformation into incomes, side by side with a certain volume of incomes which is being reconstituted into disposable or semi-disposable funds in the hands of traders. At the same time nascent savings, set aside by consumers from their normal incomes, are being added, as a new fund of maximum disposability, to that which already exists, while from the latter there is being drawn off, to demand consumable goods, a part which its owners devote to current expenditure."

3. " It is a logical and necessary fact that the total of all the incomes which arise out of an act of production is exactly equal in all cases to the value created. It may happen by accident that the entrepreneur finds himself obliged to disburse in wages, salaries, raw material purchases, interest, etc., more than he obtains for the product on the market, thus working at a loss or (in mathematical language) at a negative profit. But taking into account all the shares of productive agents, including the negative ones, it is certain that their algebraic sum is exactly equal to the value of the product, or, more concretely, to the price offered for it in the market.

" This will still be true if, instead of taking a particular act of production, we consider together all the acts of production taking place in a period, so that if we represent by P the value of the product and by I the aggregate of incomes arising from it, we can write the identity

$$P = I \quad . \quad . \quad . \quad . \quad . \quad (i)."$$

In reckoning output we must take a number of precautions against omission and double counting. " The importance of the simple equation which we have established arises from the fact that incomes are really shares in the product, distributed according to the valuation placed on the co-operation of each factor, and their total must not be greater or less than the price of the product, since otherwise we should have the anomaly of the collaborators in production having the right, as consumers, to more or less than has been produced, thus giving rise to a surplus or deficit which would result in a profit or loss to somebody. Something of this kind can occur in real life, and this constitutes a paradox which requires explanation.

(*a*)[1] " If we concentrate on the identical act of production from which the incomes arise, equation (*i*) expresses a truism; but since between the time at which the act of production takes place and that at which the product appears on the market there elapses an interval, and an interval possibly of different length from that which elapses between the end of the act of production and the time when incomes are paid and converted into demand for goods by their recipients, we may suppose that the supply and the demand arising from the same productive operations will not always coincide on the market, and that there may occur a disequilibrium, owing either to the appearance on the market, in demand for goods, of an excess of incomes over those generated by the goods currently offered in the market, or to the converse. This is of the greatest importance for the interpretation of economic phenomena, and we must consider in detail how it may occur.

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[1] I have inserted this lettering for purposes of later reference.—D. H. R.

"It is evident that the demand of each individual during the period under consideration can only manifest itself at the expense of the disposable funds in his possession at the beginning of the period *plus* the income received during the period; that is his maximum capacity to demand, and it is most probable that he will not use it to the full, but will retain at every moment a residue of disposable funds. This will be equally true if we consider all the individuals in a given area. . . .

(*b*)[1] "Let us call A the total of disposable funds existing at the beginning of the period in question, and I the total of incomes received by producers during the period. The total of effective demand reckoned in money (i.e. sums of money offered in exchange for goods for personal use or consumption) cannot exceed $A + I$. Normally it will be less, because at the end of the period there will be left a certain quantity of disposable funds A' (which may be greater or less than or equal to A, but must always be positive), and which must be subtracted from the maximum possible demand to obtain the actual demand D; so that we can write

$$A + I = D + A' \quad . \quad . \quad . \quad (ii)$$

or alternatively

$$I + (A - A') = D \quad . \quad . \quad . \quad (iii)$$

Since $A - A'$ is simply the change, positive or negative, in the total of disposable funds, we can interpret this formula as follows:—The effective demand of a given period is necessarily equal to the sum of the incomes of that period, plus the decrease or minus the increase suffered in the period by the total of disposable funds. Disposable funds can only grow at the expense of effective demand, or vice-versa.

"Equations (*i*) and (*iii*) give us

$$P + (A - A') = D \quad . \quad . \quad . \quad (iv)$$

which shows that production will be in equilibrium with demand when $A - A'$ is reduced to zero, but not when it is positive or negative. There is no doubt that the effects of such a disequilibrium are of the utmost importance in the dynamics of our economic system. This we proceed to examine, discussing in order the two possible cases.

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[1] I have inserted this lettering for purposes of later reference.—D. H. R.

"(1) *When disposable funds decrease.* This indicates that, in addition to the incomes produced during the period considered, a part of the disposable funds formerly held in reserve has been diverted to the acquisition of goods. Now the total of incomes constitutes the right and necessary sum to re-purchase, at the expected price, the output produced. If, in addition to these incomes, other sums swell the demand in competition for the acquisition of products, the price obtained by the sale of these products will be higher than what had been anticipated or regarded as normal. The prices of consumption goods in general will tend to rise. The important thing is the manner in which this increment of value is distributed. The incomes arising out of production are of two types—fixed and variable. The fixed incomes are wages, salaries, etc.; the variable are the profits of employers, merchants and speculators. The immediate effect of a price rise, that is of the output selling for more than had been anticipated, is to increase the residual profits of employers and merchants. This translates itself into a stimulus to speculation and production. Should the effect be sufficiently persistent, existing firms and businesses are expanded, new factories are set up to satisfy the new demand; industrial and commercial activities attract enterprise and capital, demand labour and offer new employment; the larger total of incomes thus distributed entails increased competition of buyers in the market for consumption goods, whence follows a new increase of demand.

"But these incomes have necessarily, under the imperative conditions of our economic régime, to come out of the stock of disposable funds, since the sum of incomes and disposable funds is constant (equation *i*).[1] It is therefore impossible for the increment of demand to be permanently satisfied by this inextensible fund, especially since speculation in commodities, induced by the rise in prices, and the expansion of industry and business, are also constituting a drain upon it.

"Thus there occurs a scarcity of disposable funds, which are in increased demand ; this causes a rise in the rates of discount and of interest generally, accompanied by a fall in the price of income-yielding assets. Saving will be stimulated by the higher earnings obtained by saved capital ; but saving is a diminution of demand, and since the rise of interest rates is also an obstacle to industrial expansion, the expansive tendency of the market is soon checked, both on the side of production and on the side of demand, since in addition the rise of prices reduces the purchasing power of consumers with fixed incomes.

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[1] "We shall later examine cases in which this is not so, but in practice there can be long periods without variation, and for methodological reasons it is convenient to consider this case first." [Equation *i* does not in fact assert the constancy of the sum of incomes and disposable funds.—D. H. R.]

" The conditions of our economic system are such that every extension of production requires simultaneously an increase of effective demand and the formation of new capital (capital in the economic sense of means of production). But both effective demand and new capital expenditure have to come into being at the expense of the stock of disposable funds, the inelasticity of which is an iron curb on production. The means to obtain new disposable funds is saving ; but it is precisely saving which withdraws demand from the market and thus kills the strongest stimulus to industry, which is the rise of prices and the prospect of higher profits. Conversely, the great causes of the expansion of demand, such as large State borrowing for public works, war expenditure or other national purposes, which gather savings together and throw them on the market in demand for goods and services, deplete the disposable funds which would serve to produce the objects to satisfy the enhanced demand, and raise the rate of interest at which industry can obtain resources.

" Technical inventions and industrial improvements which ought to facilitate the expansion of consumption by cheapening the product, withdraw temporarily from the market the disposable funds required for their installation, and diminish the number of workpeople employed and hence the incomes which would serve to create demand ; so that while the capacity to produce increases, the capacity to consume diminishes, and most of the benefits which should result from progress are irretrievably lost. It is clear that certain individuals or classes will derive some benefit as a result of the improvements which allow them to realise economies in the purchase of certain goods ; but if these economies are used to increase the sterile stock of disposable funds, the social gain will not be great. This however is the opposite case to that hitherto under discussion, and abundantly deserves more careful examination.

"(2) *When disposable funds increase.* If the stock of disposable funds increases, demand is fatally constricted, and there occurs therefore a fall in the prices of the articles least urgently desired; for the increased economy can only be obtained by imposing a relative loss on their producers. The prices affected by this decrease of demand will cease to be remunerative, since industry finds itself adapted to production at the previous prices. Should the price depression be persistent, entrepreneurs will be compelled to reduce production, to discharge workpeople and to demand fewer materials. All this represents a drop in the total of incomes which would have gone to market in demand for goods and which now do not go there. Further depressions will thus be originated, which do not even have the redeeming feature of an equivalent saving to enlarge the stock of disposable funds, since they result from a fall in production which in its turn generates further falls, throwing more firms into idleness, and so on and so on.

"In this way a small initial depression, by creating compulsory unemployment, can spread throughout industry; and thus there may occur a great crisis of unemployment and industrial inactivity, which does not correspond to any diminution in the intensity of wants, still less to any decrease in productive capacity. The cause is simply that production must be carried out in response to previous market demand, and that the capacity to demand is continuously repressed by the exaggerated attempt to accumulate savings—savings which when not given immediate productive employment are as socially sterile as they are profitable to their owners.

"The most serious aspect of this case, however, is that correction does not follow automatically as in the preceding one; unemployment, instead of palliating the disease, aggravates it indefinitely. The depressive effect of one of these crises can only pass in a relative sense, since the process of recovery is always automatically checked and the whole expansion of productive activity paralysed. Thus our social state is like that of a chronic invalid always on the verge of a grave crisis; the illness abates just enough to make life bearable again, and will return with increased gravity, brought on by the slightest disequilibrium. A bad grain harvest suffices, in the absence of other causes, to originate the catastrophe. Logically, it should only cause everybody to curtail a little their consumption of food in particular; but the rise in price of this article of prime necessity diminishes the capacity of the great mass of consumers to consume manufactured articles, and nothing more is needed to engender the spark which starts the general conflagration. The acute illness is the crisis; the chronic infirmity is the continuous social distress, the chronic misery which persist everywhere despite all the advances of science and of man's control over nature.

"Even relative improvement only comes slowly and cumbrously, not through spontaneous and necessary causes but through accidental ones. When misery increases too much, its effects can be palliated by private or public charity or by public works, even if they be a pure waste of labour. Sometimes the acute symptoms disappear through the effects of war, which, with its extraordinary expenditures, compels the collection of a great part of the reserves of disposable funds and their disbursement on provisions and war material, thus curing the restriction of production at the cost of more sanguinary evils.

"While in my view the preceding argument contains the generic explanation of crises, of social distress and of the most characteristic phenomena of our industrial system, there are certain aspects of economic fluctuations, and above all the sudden and violent character of some crises, which cannot be fully or satisfactorily explained without considering the origin of disposable funds which do not issue from the spring of saving."

4. The creation of additional money, whether metal money, State paper money, or bank credit, enables the stock of disposable funds to be increased without restricting effective demand, or effective demand to increase without trenching on the stock of disposable funds. "Nothing but good would result . . . if the disposable funds so obtained were employed exclusively in developing production. But the necessary condition for stimulating industry . . . is a considerable and sustained rise in prices, which implies that a great part of the new disposable funds is employed in speculation." The consequent rise in prices restricts consumers' demand. "It is true that the less obtained by those who live on fixed incomes, the greater are the gains

of merchants, industrialists and speculators; but since the individual capacity to consume is limited, and that chiefly because of the anxiety to accumulate capital—a desire so difficult to accomplish at the expense of customary needs, but relatively easy to satisfy out of extraordinary receipts—this transfer of the capacity to consume does not favour demand, but rather the accumulation of barren disposable funds. Demand ends by becoming stagnant at a speed which is only moderated by the achievement of advances in their incomes by the wage-earning and salaried classes."

The withdrawal of excess money depletes the stock of disposable funds and causes a fall in prices with all its evil consequences. Thus "the two opposite causes, expansion and contraction of disposable funds, lead by different routes to the same result . . . the former because speculation raises prices and diminishes the purchasing power of the masses, the latter because the fall in prices tends to the collapse of businesses and to industrial paralysis which deprives many of their means of livelihood altogether and all to some extent, since the competition of unemployed workpeople and their anxiety not to lose their employment compels them to put up with the smallest income compatible with existence." "Only thus is it possible to explain why the greatest wastes, war, armed peace, administrative corruption, the growing parasitism of oligarchies, all that is most immoral and perverse, do not cause . . . consequences quite as ruinous as would logically be expected. On the contrary it becomes intelligible that crisis does not occur, for example, simultaneously with war; the persistent economic malaise is, indeed, mitigated by war (which produces an apparent prosperity), to return more acutely with peace, that is to say at a moment when productive energies are freed from warlike tasks and might be devoted to increasing the welfare of the people. This is intelligible only on the hypothesis that social distress does not arise out of inability to produce, but out of artificial causes which paralyse productive power, impeding the expansion of the output of necessaries and therewith the effective use of social energies. Waste has one advantage among its defects; it stimulates production by promoting consumption; even though it consists in something so calamitous as war, it brings economic alleviation. Conversely economies, scientific advances which are technically a means of economising labour, everything that constitutes true economic progress, frequently produces the opposite effect. Hence arises labour's hostility to technical advance, and many other ills."

The collapse of bank credit produces even more catastrophic results than the contraction of State money. "The hunger for real disposable funds to fill the void left by the disappearance of fictitious ones commonly leads to a paroxysm. . . . This thirst for disposable funds can of course be quenched by the issue of paper money, provided that panic has not spread so far as to destroy confidence in this circulating medium. Otherwise it must be slaked slowly by means of new savings, attracted and stimulated by high interest rates. This tends however to the phenomena of paralysis, caused by the restriction of demand, which we have already examined."

5. Neither communism nor collectivism is the right cure for the troubles of society,[1] but rather a reform of the system of economic freedom and private property. "In order to avoid the evils we have deplored, it is sufficient to remove the causes which confine production within an insurmountable barrier and thus limit income and render ineffective any effort to improve the lot of the labourer. The principal cause which we have discovered is the existence of a variable stock of disposable funds occupied with speculation, especially in land and securities. It would therefore be sufficient to abolish the pernicious effects of this reserve fund, which serves no socially beneficial purpose, in order that production should experience its natural expansion and the profits of capital disappear, allowing the labourer to receive the whole product of his labour—a labour which would become much more fruitful since the disappearance of interest on capital would sweep away the main obstacle to the introduction of more efficient methods of production.

"The most radical way of preventing speculation would be the abolition of private property in income-yielding assets; but if this measure seems too violent and impracticable at present, it is not necessary to adopt it, since it would be sufficient to prohibit the exchange of income-yielding assets for real values. If there were no opportunity to employ disposable funds in, or rather to exchange them for, income-yielding assets, interest on capital, which arises from this possibility, would automatically vanish. Unable to find other profitable employment, disposable funds would be forced to turn to consumption or to the creation of real productive capital, attracted by a yield just sufficient to cover the reward for risk. In this way the stock of disposable funds would be reduced to a minimum and its variations would become harmless."

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[1] I do not attempt to summarise this part of the argument, which extends to considerable length.—D. H. R.

"If production were no longer constricted by the inextensibility of demand, and if the vagaries of the stock of disposable funds no longer impeded incomes from growing *pari passu* with the progress of productivity, industry would develop to its maximum potentiality. We have hardly any idea of what this maximum may be, for our current output bears no relation to the real productive capacity which progress has potentially created. . . . The rapid growth of incomes, thanks to the increase in productivity . . . would facilitate the formation of more abundant savings than are made to-day—but savings distributed among all the real producers, who would not be able to derive an increased income from them, since there would be no such way of employing them. These savings would therefore have to be converted into real capital—the more so because their owners, who are already investing their own labour in industry, would find it advantageous to invest there their savings, so as to make their labour more productive. For the first time the individual and the social functions of capital would coincide.

"Income-yielding assets would fall out of circulation; but since they would still yield a return to their owners they would ultimately have to be redeemed by the State, especially land, whose rents might rise greatly owing to the demand occasioned by the expansion of production, and come to absorb parasitically a considerable share of the output." But that is another story.

III

I propose to offer brief comments on two features only of Señor Bernacer's work—his theory of the rate of interest (II, 2 and 5) and his experiment in "period-analysis" (II, 3).

(1) There is evidently a resemblance in certain respects between Señor Bernacer's theory of interest and that which has been put forward in recent years by Mr. Keynes. The rate of interest is regarded as determined, primarily at all

events, *outside* the system of current production, as the result of the interplay between a mass of liquid funds and a mass of existing income-yielding assets. The rate of interest, determined in this way, acts as a barrier to the employment of funds in industrial uses; if the money held up for speculation purposes could be released, the rate of interest would fall and the industrial system would be propelled towards full employment.

So far the two writers seem to be on common ground; but when it comes to formulating more precisely the ultimate origin of interest, their paths diverge. Both, as it seems to me, fall into error from the same cause—an inability to recognise in the productivity of investible funds a direct determinant of interest on the side of demand. But they err in different directions. Mr. Keynes is left, at all events in his own view, with a purely monetary theory whose shortcomings I have attempted to point out elsewhere. Señor Bernacer recognises physical productivity as the ultimate source of interest, but being unable to believe in the productivity of free capital or loanable funds (" loans are not in themselves the cause of interest ") he is driven to seek refuge in the productivity of Nature. In this piece of neo-Physiocracy I am afraid that he seems to me somewhat behind the times—even if some centuries in advance of the neo-mediævalism of Mr. Keynes!

(2) I have already paid a tribute of respect, which is possibly also a tribute of obligation, to Señor Bernacer's attempt to think dynamically in terms of time-intervals. But it cannot, I think, be said that he has achieved complete clarity by means of his attractively simple system of equations. The paragraph marked (*b*), p. 56, purports to be an elaboration of the paragraph marked (*a*); but in fact it tells a different story. In paragraph (*a*), a possible source of trouble is detected in the inequality between two lags —that between the doing of work and the receipt of money income, and that between the doing of work and the sale of the product on which work has been done. We may perhaps fairly simplify by thinking of the first lag as virtually zero; in this case what Señor Bernacer is trying to say is, I think, that disequilibrium may arise if the rate of *input* (to which is attached the rate of flow of money income) increases or diminishes relatively to the rate of *output* (sales). Further analysis along these lines might have led him to a scheme resembling Mr. Hawtrey's, in

which an excess of outlay over income is associated with a diminution, and a deficiency of outlay below income with an increase, of *stocks*. But I do not think it has done so; for when we come to paragraph (*b*), the emphasis shifts to a third lag of which we have not previously heard—the lag between the receipt of income and its disbursement.

It is evident that in the passages which follow Señor Bernacer gives a generally correct and illuminating account of the results of the processes of hoarding and dishoarding; but he succeeds in doing so, I think, in spite of his algebra. For he does not really explain how, for the community as a whole, received income (I) can fail to move *pari passu* with total demand (D), i.e. how any divergence can arise between them. He does not seem, as I have said, to be envisaging, like Mr. Hawtrey, a divergence between outlay and income associated with a change in the level of stocks. Nor does he explicitly, like Mr. Keynes in his *Treatise on Money*, adopt a definition of income which includes " normal " profits and " normal " profits only. Nor again does he attempt, as I have done, to distinguish between the " received income " and the " disposable income " of the same time-interval. Yet he seems to be feeling his way in turn towards all these expedients.

I feel that I owe an apology to English-speaking economists for not having shared Señor Bernacer's essay with them before. Besides the language bother and the general difficulty of distinguishing sheep from goats among the flocks of monetary literature which reach us all, I have perhaps a somewhat better excuse. It is no disparagement to Señor Bernacer's work to say that it is perhaps, after all, not quite so interesting as at first sight might appear. There is a legend abroad to-day that up to about the year 1930 practically all academic economists were thinking and writing exclusively in " full equilibrium " terms, consciousness of the problems connected with idle money and unused resources being virtually confined to a handful of inspired amateurs scribbling in isolated garrets. This legend bears no close relation to the truth. Had Señor Bernacer's essay become more widely known to his fellow-economists in 1923 than I believe it to have done, the order of ideas contained therein would not have been so unfamiliar to them as the modern undergraduate is being taught to suppose. But I think all the same that it is well worth re-printing; and I sincerely hope that its author is still alive.

Analysis of Germany's Foreign Trade and the War[1]

By H. C. Hillmann

In this survey and analysis of Germany's foreign trade I have attempted to deal with three problems in particular: firstly, with the changes that have taken place in the volume of Germany's foreign trade during post-war years; secondly, with the changes in the direction and orientation of Germany's foreign trade; and lastly, as volume and direction of trade have a direct bearing on the degree of Germany's vulnerability to foreign interference in times of war, I shall have to consider the probable effects of the import and export blockade.

There is a close connection between the political aspirations of the German Government and the principles which govern her foreign trade policy. The publications of the Institut für Konjunkturforschung explain the new conception which underlies German foreign trade. It is argued that commodity benefits accrue to nations from the utilisation of all absolute and comparative cost advantages under a wide system of international free trade. But there are also obvious dangers in too close an economic and political dependence of nations upon each other. The spreading evil of depressions is quoted on the one hand as such a danger and the threatening sanctions clause in the League Covenant is considered on the other hand as a device to interfere with nations which intend to rectify the injustice done to them at Versailles. In order to reduce the effectiveness of these and other influences, the present regime has deliberately repudiated the welfare criterion on which free trade is internationally based. The new criterion for Germany's foreign trade is found in what her leaders have called an " absolute minimum of import requirements ". Irrespective of costs, all available internal material resources and deposits ought to be developed to the utmost and foreign trade should be conducted with a view to supplementing these " necessary " internal requirements which cannot be covered by domestic resources.

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[1] This paper was read at a group meeting of the Manchester Statistical Society on 24th November, 1939.

Two pronouncements have given legal sanction to this narrower ideal of German foreign trade. The " Four Years Plan " of 1936 determines the lower limits of Germany's volume of import requirements. For the greater the success in developing internal resources and in cultivating substitute products (at which this Plan is aiming) the smaller will be Germany's import requirements. And the " New Plan " of 1934 defines the upper limits of Germany's volume of imports. For it is stipulated in this Plan that no more shall be imported[1] into Germany than can be paid for by the receipts of her exports.

The necessary corollary of these plans is, of course, strictest Government supervision of imports and exports. Importers and exporters have to apply for licences and by means of foreign exchange allocation the Government is able to control both the volume and the kind of materials which it desires to import. Within the two limits, which circumscribe imports, the volume required varies with the state of internal business activity and with the magnitude of domestic crops. In addition to controlling the volume of trade, the German Government has attempted to maintain the purchasing power for foodstuffs and consumers' goods raw materials stable by regulating wages, salaries and dividends, and thus is able to increase the kind of imported materials which are required by her armaments and investment goods industries.

I

Having said so much about the function and administrative methods of regulating foreign trade, it is useful briefly to describe the development of Germany's trade in post-war years. Table I assembles the more important data.

With the exception of 1926, Germany had in all years preceding 1929 an unfavourable balance of trade. During 1924–25 imports exceeded exports on account of bad harvests in 1925 and on account of inflated export prices in 1924.

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[1] The system of direct import restrictions properly dates from 1931 when foreign exchange was rationed on the basis of 1930 imports. It was not very effective until Dr. Schacht introduced the New Plan.

The export surplus of 414 million marks in 1926 was partly due to the reduction of British competition in world markets during that year. And the excess of imports over exports in 1927 and 1928 was mainly the result of Germany's large-scale industrial re-organisation and rationalisation, which naturally increased her annual import requirements.

During the depression import prices fell more steeply than export prices and ever since, with the exception of 1934 and 1938, Germany could register a favourable balance of trade. In fact, the present regime benefited largely from the uneven development of import and export prices. Taking import prices in 1929 as equal to 100, they fell to 40.5 in 1933, recovered to 60 in the middle of 1937, fell again to 53 in March, 1938, and improved since. On the other hand, export prices fell from 100 in 1929 to 62.3 in 1936, improved to 66 in 1937 and to 69 in February, 1938, and fell slightly to 65 in March, 1939. Throughout the period of Nazi rule the exchange relation between export and import prices was much more advantageous to Germany than in 1929. Although this relation deteriorated from 142.4 in 1932 to 110.1 in April, 1937, the gap of the scissors widened in Germany's favour to 137.1 in September, 1938, and closed again to 129.6 in February, 1939.

The unfavourable trade balance in 1934 was due primarily to drastic restrictions of exports and concentration on home industries in the first year of Nazi management; and subsequently the control machinery of foreign trade worked smoothly and according to the rules as laid down in the "New Plan". However, in 1938 the trade balance again became unfavourable, and this was caused by the interaction of three sets of circumstances. Firstly, the fall in raw material prices from the middle of 1937 to the middle of 1938 lowered the foreign demand for Germany's exports. Secondly, in view of her intensified armaments preparation and despite higher export prices for iron, steel, cement and coke, Germany's coal and coke exports decreased by 123 million Reichsmarks and her exports of iron products fell by some 70 million Marks. Thirdly, foodstuffs for storage purposes and the greater requirements of war materials increased imports above the high level of 1937. Germany imported 100 million R.M. more iron and other ores and despite unusually good crops, she increased her cereal imports from 353,000 tons in 1936 to 4,000,000 tons in 1938. At the same time she imported in 1938 14% more oilseeds, 35% more copper, 131% more pig and scrap iron, 28% more petrol and 25% more gas oil than in 1937.

TABLE I.

GERMANY'S BALANCE OF TRADE AND CAPITAL MOVEMENTS
(in Million R.M.)

	Imports	Exports	Export (+) Import (−) Surplus	% Change of Imports with previous year	% Change of Exports with previous year	Capital Movements Inward (+) Outward (−)	Germany's foreign indebtedness [1]
1924	9,083	6,552	− 2,531			+1,954	
1925	12,362	9,290	− 2,072	+36·1	+41·8	+3,523	
1926	10,001	10,415	+ 414	− 19·1	+12·1	+ 739	
1927	14,228	10,801	− 3,427	+42·3	+ 3·7	+4,352	
1928	14,001	12,276	− 1,725	− 1·6	+13·7	+4,058	
1929	13,447	13,483	+ 36	− 4·0	+ 9·8	+2,023	
1930	10,393	12,036	+1,643	− 22·7	− 10·7	+ 542	26,800
1931	6,727	9,599	+2,872	− 35·3	− 20·2	− 2,266	23,800
1932	4,667	5,739	+1,072	− 30·6	− 40·2	− 434	20,600
1933	4,204	4,872	+ 668	− 9·3	− 15·1	− 550	19,000
1934	4,451	4,167	− 284	+ 5·9	− 14·5	+ 347	13,900
1935	4,159	4,270	+ 111	− 6·6	+ 2·5	+ 205	13,100
1936	4,218	4,768	+ 550	+ 1·4	+11·7		12,400
1937	5,375	5,787	+ 412	+27·4	+21·4		10,800
1938	5,449	5,257	− 192	+ 1·4	− 9·2		10,000

[1] Foreign investments were estimated in 1913 at 28,000 million R.M., in 1931 at 5,900 million R.M., and in 1934 at 4,200 million R.M.

It would be misleading, in the light of changed prices, if one were to take the considerable drop in export and import values (given in the first two columns of Table I) as representing the development of Germany's volume of trade. On the basis of 1929 prices (equal 100) the volume of exports had fallen in 1938 to 71 and the volume of imports had fallen to 82.

Germany ceased to publish her service and interest balances after 1935. But the general trend of the German balance of payment can be read from the last two columns of Table I. In pre-1928 years she balanced her deficits on income account by inward movements of capital. These deficits increased during those years because of the heavy unilateral transferences of reparations which amounted to 300 million Marks in 1924, 1,200 million Marks in 1926, 2,000 million Marks in 1928, 2,500 million Marks in 1929, and 1,000 million Marks in 1931. With the inflow of capital from abroad, Germany's foreign indebtedness rose and consequently her deficits on interest account increased.

Germany's visible export surpluses in 1929 and 1930 were not as yet sufficient to offset her reparation payments and deficits on interest account, but the rate at which her foreign indebtedness increased slowed down. Reparation payments ceased in 1931. Germany's external burdens thus were considerably reduced. In late 1932 there were signs too of improvements in business activity. Hence the access to power of her present rulers in 1933 coincided with favourable external and internal economic conditions. By rigorous foreign trade control they were able to realise export surpluses during most of the following years and constantly to reduce German foreign indebtedness from 26,800 million Marks in 1930 to 10,000 million Marks in 1938. Of this reduction in her indebtedness roughly 6,000 million Marks were accounted for by the depreciation of creditor currencies, and the actual repayment of 10,000 million Marks was financed partly out of active trade and service (shipping) balances and partly by the sales of German assets abroad.

So far we can draw two conclusions. Firstly, in 1938 Germany's volume of trade was by 20%–30% smaller than in 1929 and, secondly, her foreign indebtedness had decreased by 63% since 1930.

II

We can now turn to our second problem, namely what changes have taken place in the orientation of Germany's foreign trade? This is illustrated in Table II. There I have classified the 109 countries with which Germany has foreign trade relations into three main groups, and these groups have been divided into sub-groups of countries within similar regions. The classification of countries into Neutral States, Overseas Countries and Allied Empires is adopted with reference to the criterion of communication in war time. That is, I assume that Germany can, as far as transport is concerned, maintain her trade relations with all those countries which I have classified in the group of Neutral States, but that she will be cut off from the markets and sources of supply of all Overseas Countries and Allied States. The criterion for the sub-classification

TABLE II.

GERMANY'S FOREIGN TRADE BY COUNTRIES (in Million R.M.)

	IMPORTS					EXPORTS				
	1929		1933	1938		1929		1933	1938	
	Million R.M.	%	%.	Million R.M.	%	Million R.M.	%	%	Million R.M.	%
1. Poland—Russia	764·5	5·7	5·9	142·9	2·7	697·3	5·1	6·9	134·4	2·6
2. Italy—Egypt	524·8	3·9	5·0	298·1	5·5	689·2	5·1	5·3	358·6	6·8
3. Mediterranean States	502·0	3·9	4·9	366·5	6·7	461·6	3·5	3·6	399·5	7·5
4. South Eastern Europe[1]	323·1	2·4	2·6	332·6	6·1	361·4	2·6	2·0	323·2	6·2
5. Baltic States	1,188·7	8·8	9·3	730·5	13·4	1,647·6	12·2	11·1	798·1	15·2
6. Contiguous States	2,850·1	21·3	21·9	977·9	17·9	4,175·5	31·2	34·7	1,192·0	22·7
A. NEUTRAL STATES	6,153·2	46·0	49·6	2,848·5	52·3	8,032·6	59·7	63·6	3,205·8	61·0
7. Near and Far East	481·6	3·6	4·9	272·9	5·0	494·0	3·6	3·7	299·2	5·7
8. South America	1,545·3	11·5	9·9	809·9	14·9	1,011·5	7·4	5·9	623·0	11·9
9. U.S.A.	1,805·1	13·4	11·6	412·0	7·5	1,011·9	7·6	5·3	159·7	3·0
B. OVERSEAS COUNTRIES	3,832·0	28·5	26·4	1,494·8	27·4	2,517·4	18·6	14·9	1,081·9	20·6
10. French Empire	775·0	5·8	5·2	203·0	3·7	980·4	7·3	8·4	236·5	4·5
11. British Empire	2,683·5	19·7	18·8	903·0	16·6	1,949·6	14·4	13·1	732·7	13·9
C. ALLIED STATES	3,458·5	25·5	24·0	1,106·0	20·3	2,930·0	21·7	21·5	969·2	18·4
A—C. TOTAL	13,443·7	100·0	100·0	5,449·3	100·0	13,479·9	100·0	100·0	5,256·9	100·0

[1] Jugoslavia, Rumania, Bulgaria.

of these three groups is purely geographical. Thus I distinguish between the regions of Baltic States, Mediterranean States, Contiguous States, etc.

It is clearly evident from Table II that Germany's foreign trade relations have increased with all Neutral States and decreased with both the Overseas Countries and Allied States. Within these groups the development of trade connections with different regions has not been uniform. Thus we find that the decrease in relations with the Contiguous States, Poland and Russia, was outweighed by increased trading with the South Eastern, Mediterranean and Baltic States. On the other hand, the improvement in trading with the Near and Far Eastern, and particularly the South American States, was not sufficient to neutralise the deterioration of trade with the United States.

Taking all regions together with which trade relations have improved, we find that their share in Germany's total imports increased from 36.1% in 1929 to 51.6% in 1938 and that their share in Germany's total exports increased from 34.4% in 1929 to 53.3% in 1938. By this method of showing percentages we automatically eliminate all the difficulties arising out of price level variations and exchanges.

The main features of the structural change in Germany's foreign trade relations can be depicted by saying that there has been a considerable decline in Germany's commercial relations with the United States, the British and French Empires, and a marked improvement in the relations with the States in the South American, the Baltic and the Mediterranean (including Italy and South East European countries) regions.

In order to show the intensity of German trade relations with each of the more important individual states, reference is made to Table III. Columns 3 and 6 respectively show the share of each country's exports going to Germany and the share of German goods in the total imports of each country. In Columns 1 and 2, and 4 and 5, Germany's imports from and her exports to those countries during 1929 and 1938 are given as a percentage of her total imports and exports. Thus, Germany's imports from Bulgaria increased from 0.4% to 1.5%, and these imports corresponded in 1938 to 59% of Bulgaria's total exports. On the other hand, Germany's exports to Bulgaria increased from 0.3% to 1.1%, which in 1938 corresponded to 52.6%

TABLE III.

INTENSITY OF GERMAN TRADE RELATIONS

Percentage Distribution

	Germany's Imports (%)		Countries' exports to Germany	Germany's Exports (%)		Countries' imports from Germany
	1929	1938	1938	1929	1938	1938
Denmark	2·8	3·1	20·0	3·6	3·8	25·0
Estonia	0·2	0·4	30·8	0·3	0·4	26·6
Latvia	0·5	0·8	38·0	0·7	0·8	27·6
Lithuania	0·5	0·4	20·1	0·4	0·4	26·5
Finland	0·9	1·6	16·2	1·4	1·6	24·0
Sweden	2·6	4·8	17·1	3·5	5·1	25·2
Norway	1·0	1·8	13·0	1·7	2·3	16·7
Hungary	0·7	2·0	36·8	1·1	2·1	44·2
Jugoslavia	0·4	2·0	35·2	1·1	2·3	33·2
Bulgaria	0·4	1·5	59·0	0·3	1·1	52·6
Rumania	1·6	2·6	30·1	1·2	2·8	38·1
Greece	0·8	1·7	39·0	0·6	2·1	32·0
Turkey	0·6	2·1	43·6	0·5	2·9	46·8
Portugal	0·5	0·6	10·9	0·7	0·7	15·2
Spain	2·0	2·3	—	1·7	1·8	—
Italy	3·3	4·6	18·2	4·5	5·9	25·0
Egypt	0·6	0·8	10·1	0·6	0·9	12·6
Argentine	5·5	4·0	7·0	2·8	2·8	10·2
Brazil	1·6	3·9	19·2	1·6	3·1	24·1
Venezuela, Uruguay	0·9	1·3	8·0	0·6	1·4	16·0
Chile	0·9	1·7	12·1	0·7	1·2	26·8
Columbia	0·4	1·0	12·9	0·6	0·9	13·6
Peru	0·1	0·7	14·0	0·2	0·6	19·0
U.S.A.	13·4	7·5	3·7	7·6	3·0	3·0
France	4·8	2·6	6·5	6·9	4·1	8·3
Canada	2·3	1·3	1·2	0·6	0·5	1·7
British India	4·6	2·6	4·8	1·6	2·0	9·2
Australia	2·4	1·0	2·7	0·6	0·8	3·9
South Africa	1·2	1·4	4·1	0·7	1·6	5·9
New Zealand	0·2	0·2	1·4	0·1	0·1	1·7
Ireland	—	0·2	3·5	0·2	0·5	3·2
Belgium	4·8	3·6	11·2	5·6	4·3	11·6
Holland	5·2	3·6	16·1	10·1	8·5	21·5
Switzerland	2·4	1·9	18·4	4·7	4·0	24·7
Czecho-Slovakia	3·6	2·4	21·0	4·9	2·6	19·7
U.S.S.R.	3·2	0·9	6·5	2·6	0·6	15·0
Poland	2·5	1·8	19·4	7·3	4·5	19·1
Japan	0·3	0·4	1·2	1·8	1·8	4·9
Total Countries with which Germany increased relations	24·8	43·7	—	30·3	48·1	—
Total Countries with which Germany decreased relations	54·9	33·4	--	55·4	37·8	—

of Bulgaria's total imports. The analysis indicates clearly the relatively high degree of dependence of the Mediterranean and South American States on German markets and their importance for Germany as a source of supplies.

In fact the dependence of the six Mediterranean States on the German market was even greater, if one were to include Poland and Czecho-Slovakia with Germany. These six States directed no less than 49% of their aggregate exports towards and derived 51% of their aggregate imports from Germany. The formation of such more or less clearly defined "economic blocks" was partly conditioned by considerations of political strategy and national defence and partly by a noticeable process of disintegrating world markets all round. To substantiate this latter statement we need only refer to the fact that roughly 50% of Britain's total exports went in 1938 to Empire countries as against 44% in 1929. During the same period France's exports to her colonial possessions increased from 19% to 28% and similarly Japan increased her share of total exports which went to territories politically dependent on Japan from 24% in 1928 to 55% in 1938. Hence to the extent that Britain, France and Japan consciously strengthened their colonial trade connections, Germany was forced to intensify her trade drive in other regions.

How then, we may now ask, did Germany succeed in forming the Mediterranean and South American trade blocks? This, I suggest, was due to a planned foreign trade policy, to the conscious exploitation of trading possibilities by means of innumerable devices of currency manipulation. The German Reichsmark was one of the few currencies among others which was highly over-valued in terms of other currencies and which had not been devalued from its official gold parity. Thus, in the absence of any Government control of foreign trade, imports would have increased and exports would have decreased. But in fact the Germans subjected imports to very rigid quantitative controls. Hence inasmuch as Germany's import "requirements" during the last few years increased with the revival of business activity, the production of armaments and the accumulation of food and raw material stocks, it was absolutely essential to stimulate exports in order to meet the greater import liabilities by export receipts.

The methods which were used to stimulate exports varied a great deal. They were different with regard to importing countries which conducted their trade with Germany on a free exchange basis from those which were applied to countries with exchange controls and with which Germany had clearing agreements. Germany's success in stimulating her exports was greatest in all those countries with which she had clearing arrangements.

In the case of Germany's trade with free exchange countries, she used the method of directly subsidising exports, which otherwise could not be undertaken. The sums required for the subsidy were obtained by a turnover tax on all industrial enterprises. For certain export transactions the German Government frequently depreciated to varying extent the cost of the Mark in terms of foreign currencies. And more recently there has developed a practice in Germany of discounting some export bills at lower rates of interest than others.

With reference to Germany's success in developing the Mediterranean and South American trading blocks, one has to keep in mind that in these regions exchange control predominated. The commercial methods applied in those regions fall more or less into three groups. Firstly, Germany deliberately purchased raw materials and foodstuffs at higher than world market prices from these countries. Secondly, she lavishly granted long-term credits to those countries and, thirdly, whenever it was possible, she made use of direct barter exchange. The net effect of all these methods was the creation of export outlets to these regions.

(1) Germany's trading with the States of South Eastern Europe and the Mediterranean countries was conducted since 1931–34 in the light of clearing arrangements. Thus, without placing any strain on her foreign exchange position, she acquired freely the raw materials and foodstuffs of these countries. In fact, her purchases by far exceeded her sales. That is evident from the analysis of Germany's export and import balances by regions in Table IV. The deliberate policy of buying naturally resulted in the accumulation of frozen balances due to South Eastern and Mediterranean exporters in the clearing. That meant that they could not obtain payment in their own currency until sums were put into the clearing by importers of German goods.

The extent to which Germany's import surpluses represented frozen balances due to South Eastern, Mediterranean and South American States in the clearing is partly reflected in Countries 5, 6 and 12 of Table IV. When Germany first commenced this policy of large-scale purchases, it was regarded by the Mediterranean and South American exporters as a blessing in their favour. For during the depression they had been particularly hard hit, had lost some of their markets altogether and thus greeted the opening of the German market to them with much satisfaction. The Germans, however, viewed the new development differently. They aimed not only at a temporary but at a permanent re-orientation of their foreign trade. They tightened their grip on all countries with which clearing arrangements existed, firstly by buying at high prices and secondly, by reselling Columbian coffee, Balkan dates, raisins and tobaccos at low prices in countries with free exchanges. By means of the latter measure, they spoilt the remaining markets for the Balkan and South American countries and thus forced them to continue their trading with Germany.

The Balkan exporters soon realised, however, that increased trade relations with Germany were not an unmixed blessing. Deficits of Balkan currency in the clearing pools increased with the increase of German import surpluses. Balkan exporters were unable to obtain payment and in order to reduce the frozen balances, the Governments of these Balkan States induced their importers to purchase commodities in Germany rather than anywhere else. The Germans realised their bargaining strength and very often refused to deliver goods which could be sold in countries with free exchange. That explains why at one time Jugoslavia had to accept aspirins, Rumania typewriters and Greece mouth-organs.[1]

Germany adopted similar methods in her trade with South American States. German importers of South American goods would pay with " Aski " Marks, which by arrangement could be used for no other purpose than the purchase of German commodities. The South American exporter sold

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[1] In his excellent survey of German trade relations with South East European States, Dr. Benham comes to the conclusion that up to March, 1939, Germany did not really exploit her position. Even if the aspirin, mouth-organ argument is relatively unimportant, it indicates the kind of danger—arising from the undue accumulation of frozen balances—which the Balkan Governments in their bargaining and dealings with Germany " actually experienced " or anticipated and hoped to minimise. See: *South Eastern Europe*, by The Royal Institute of International Affairs and the London and Cambridge Economic Service, 1939, p. 196.

TABLE IV.

GERMANY'S IMPORT (-) AND EXPORT (+) BALANCES (in Million R.M.)

Country Groups	1929	1933	1934	1935	1936	1937	1938
1. Poland	+ 4·6	- 0·4	- 15·1	- 11·3	- 4·9	+ 5·3	+ 7·1
2. Russia	- 71·8	+ 88·1	-146·4	-175·7	+ 32·9	+ 52·3	- 15·6
3. Baltic States	+ 458·9	+ 149·9	+103·3	+ 76·7	+ 81·5	+150·1	+ 67·6
4. Contiguous States	+1,325·4	+ 770·9	+262·4	+336·5	+366·0	+335·2	+214·1
5. South Eastern Europe	+ 38·3	- 13·4	- 27·3	- 42·1	+ 3·3	- 51·4	- 9·4
6. Mediterranean States	- 40·4	- 26·7	- 47·7	- 50·2	- 76·1	- 8·0	+ 33·0
7. Italian Empire	+ 159·6	+ 60·4	+ 60·7	+ 90·9	+ 32·4	+ 93·6	+ 62·1
8. Egypt	+ 4·8	- 16·2	- 16·9	- 6·2	+ 4·6	- 0·1	- 1·6
NEUTRAL STATES	+1,879·4	+1,012·6	+173·0	+218·6	+439·7	+577·0	+357·3
9. Near East	- 6·7	- 13·7	- 15·8	- 2·3	+ 11·7	+ 28·6	+ 20·4
10. Far East	+ 19·1	- 11·0	+ 12·4	+ 52·3	+ 69·5	+ 82·7	+ 5·9
11. U.S.A.	- 793·2	- 230·7	-210·4	- 66·3	- 60·5	- 65·8	-252·3
12. South America	- 533·8	- 129·7	-193·8	-191·0	- 67·1	-197·8	-186·9
OVERSEAS COUNTRIES	-1,314·6	- 385·1	-407·6	-202·7	- 46·4	-152·3	-412·9
13. French Empire	+ 205·4	+ 191·1	+ 71·6	+ 80·5	+137·0	+116·6	+ 33·5
14. British Empire	- 733·9	- 150·8	-121·1	+ 14·6	+ 20·0	-128·9	-170·3
ALLIES	- 528·5	+ 40·3	- 49·5	+ 95·1	+157·0	- 12·3	-136·8
TOTAL SURPLUSES	+ 36·2	+ 667·8	-284·1	+111·0	+550·3	+412·4	-192·4

the Aski Marks (against his own currency) at a value which was sufficiently depreciated to give the South American importer an inducement to purchase German goods. Again, large-scale buying on the part of Germany led to the accumulation of Aski Marks in South American States which could be reduced only by greater imports of German goods. Hence the stimulation of German exports, thus brought about, not only defeated Great Britain and the United States in these markets, but adversely affected some local industries in these countries (notably in Chile).

In order to guard against the undue accumulation of Aski Marks or the increase of frozen balances, some Governments imposed drastic restrictions on the exports of certain commodities to Germany. Thus, in September, 1938, Brazil decided to refuse all exports of cotton, coffee and cocoa against Aski Marks. Bulgaria prohibited the sale of wheat to countries with which she had clearing agreements. Jugoslavia decreed that copper should be exported only against payment in free exchange. Both Turkey and Greece latterly stipulated in their clearing arrangements with Germany that commodities sold by them must on no account be resold.

(2) The second method by which Germany stimulated her exports was that of granting long-term credits to Balkan and South American States. In view of her weak banking resources much surprise was caused by such a generous credit policy. In fact, however, not Germany but the Governments of the debtor countries financed these credits. For the postponement of payment by the importers of German plants, machinery and armaments caused a lack of funds in the clearing, out of which the importing countries could pay their exporters. Hence the Balkan Governments were forced to grant " advances " to their exporters with the result that Germany's credits to importers of German goods were in fact financed by the Governments of Germany's debtors. Even when imports to and exports from Germany were equal in value, a frozen balance of German indebtedness was bound to accumulate if the importers of German goods were permitted to postpone payment. To safeguard against this danger, the new clearing agreement with Jugoslavia of December, 1938, provided that German purchases were to be limited to the amount " actually collected " in payment from Jugoslav importers of German goods.

Recent political unrest in the world proved to be advantageous to the success of Germany's trade drive towards the South East. Having no armament industries of their own the Balkan and South American countries turned to industrial European States for armament supplies. Most of these States were either unable or unwilling to comply with the demands of Balkan Governments to deliver armaments at short notice and on credit. Germany alone responded favourably and did not even ask for cash. She sold some of her second line aeroplanes, tanks and guns, which were replaced by more up-to-date designs. But in as far as the equipment, which was being exported, required constant ammunition, replacement and spare parts, Germany increased her influence and her hold over the importing countries.

(3) The last method in bilateral trading, which cannot always be clearly distinguished from the credit method, has more recently come into the forefront. It represents direct and specific barter transactions. Thus, in October, 1938, Turkey was granted a credit of 150 million Marks, which was to be repaid in Turkish primary products. In the same month Poland received large credits on similar conditions. In January, 1939, Bolivia agreed to accept German machinery, amounting to 4 million Marks, against Bolivian petrol and minerals, in the specified proportion of 70 to 30 respectively of the total value. In her agreement with the Argentine of March, 1939, Germany bartered 14 million Pesos worth of railway equipment for Argentine wheat worth 6 million Pesos and wool worth 8 million Pesos.

Germany has successfully applied one or the other of these three methods in the pursuit of her fundamental objective to create " economic blocks ". Indeed, the growing preponderance of her military power in Central Europe was accompanied by a steady commercial penetration into the South Eastern hinterland. With 50% of their imports and exports coming from and going to Germany these States were more than ever at her mercy. Even so Germany's foreign trade objective would not be fully realised until the South Eastern States had adjusted their economies completely to satisfy German requirements. What that meant Dr. Funk has well explained, when he praised the German-Rumanian trade agreement of March, 1939, as " a general model for future arrangements ". Rumania then agreed to orientate and to increase her production towards fodder, oil, textiles and timber and Germany in turn was to deliver armaments and machinery. In addition, mixed concerns were to be set up for the exploitation of Rumanian petrol and metal resources.

III

The final problem relates to the probable effects of the Allied Powers' blockade on Germany's foreign trade. We shall have to determine the quantities of products which Germany is prevented from importing and those which she is prevented from exporting as a result of economic warfare at sea. In view of her smaller volume of trade in 1938 as compared with that in 1929 and in view of the re-orientation of her trade since 1929 (i.e., away from the Allied Empires and intensified towards the Mediterranean and Baltic States) one may say at the very outset that Germany is to-day less vulnerable to the blockade than she would have been in 1929.

The full significance of the blockade can only be grasped with reference to the structural composition of Germany's imports and exports. Table V shows clearly that Germany's imports of finished goods have declined from 17.5% to 7.3% of her total import values during the last 10 years, and that her exports of finished goods have increased from 72.2% in 1928 to 81% in 1938. Hence the impact of the import blockade falls more heavily than in 1928 on Germany's imports of raw materials and foodstuffs and the export blockade hits Germany's export industries of finished goods more severely than it would have done in 1928.

In order to arrive at the import and export quantities which would be intercepted by Allied control ships, we based our analysis on the German foreign trade publications by the Institut für Konjunkturforschung. These statistics comprised in 1938 over 1,000 commodity groups, each being correlated to 109 importing and exporting countries. We reclassified all 1,000 groups and reduced them finally to 18. The distinguishing feature of these 18 groups is that one particular raw material predominates in the variety of half-finished and finished commodities which each group includes. On the other hand, we classified the 109 countries into Neutral States, Overseas Countries and Allied Empires.

It was assumed that all imports from and all exports to the Overseas and Allied Countries would be intercepted. In this way we were able to assess the tonnage which through import interception Germany would be prevented from obtaining and which through export interception she would be prevented from selling in Overseas Countries and Allied Empires.

TABLE V.

GERMANY'S IMPORTS IN MILLION R.M. AND PERCENTAGE DISTRIBUTION

	1928	1932	1933	1934	1935	1936	1937	1938
Living Animals ..	1·03	·74	·73	·75	1·09	2·28	1·93	2·07
Foods and Drinks	29·92	32·00	25·75	23·97	23·95	33·27	35·84	36·66
Raw and Half-Finished ..	51·55	51·68	57·58	58·42	61·38	55·03	54·63	53·05
Finished Goods ..	17·50	15·58	15·94	16·86	13·58	9·42	6·73	7·28
TOTAL IMPORTS	14,051	4,667	4,204	4,451	4,159	4,218	5,375	5,449
= 100%	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

GERMANY'S EXPORTS IN MILLION R.M. AND PERCENTAGE DISTRIBUTION

	1928	1932	1933	1934	1935	1936	1937	1938
Living Animals ..	·16	·25	·18	·09	·07	·05	·05	·04
Foods and Drinks	5·23	3·54	3·53	2·81	1·76	1·78	1·41	1·12
Raw and Half-Finished ..	22·43	17·98	18·55	18·97	18·12	18·42	18·90	17·26
Finished Goods ..	72·18	78·23	77·74	78·13	80·05	79·75	79·63	81·53
TOTAL EXPORTS	12,055	5,739	4,871	4,167	4,270	4,768	5,788	5,257
= 100%	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

To avoid any over-optimistic interpretation of the probable effects of the Allied blockade a note of caution must be added. (1) The calculated shortages of imports were based on 1938 data. In this year German imports of some commodities were extremely high, due to the building up of stocks and hence the intercepted quantities of imports might appear exaggerated. (2) The requirements of certain materials in war time exceeded by far ordinary peace-time requirements. Consequently the German losses of imports, based on 1938 quantities, might be more serious than our calculations would suggest. (3) We assumed throughout that the blockade would be completely effective. That again might not be the case. But subject to these inaccuracies, for which allowance will be made if possible, Table VI gives the best available information showing the intercepted quantities of German imports and exports.[1]

TABLE VI.

EFFECT OF ALLIED BLOCKADE ON GERMAN IMPORTS AND EXPORTS
(Based on German Foreign Trade Data for 1938.)

	Industrial Classification by Raw Material	Total Imports	Intercepted Imports	Total Exports	Intercepted Exports
		In Thousand metric tons			
		I	II	III	IV
I	Fat and Meat Products	2,393·8	1,620·6	17·4	1·9
II	Cereals of all kinds	4,222·8	3,087·4	30·4	7·3
III	Other Foods, Tobaccos, Drinks ..	3,009·6	1,186·0	124·8	62·6
a.	Food and Drink Industries.. ..	9,626·2	5,894·0	172·6	71·8
IV	Textile Fibres, Wool, Animal Hairs	847·7	664·6	20·9	0·7
	Textile Yarns, Clothing, Stockings, Hats	68·9	37·8	76·4	23·5
V	Hides and Skins	135·7	98·4	0·5	0·2
	Shoes and Leather Products ..	8·2	4·0	4·8	1·6
VI	Wood for pulp	1,674·6	444·4	—	—
	Cardboard and paper goods ..	177·9	4·8	420·1	247·5
VII	Raw and Half-Finished Timber..	2,714·5	428·7	33·7	7·2
	Timber products, Brushes, Toys..	56·8	3·2	57·7	31·2
VIII	India Rubber	108·4	71·4	0·3	0·2
	Rubber Soles, Tubes, Beltings ..	2·0	0·9	17·7	6·6
IX	Phosphates	1,703·2	1,101·5	1,219·2	362·4
X	Mineral Oils, Technical Fats ..	5436·9	2,556·9	345·1	120·1
XI	Non-Ferrous Ores	4,353·4	1,344·6	91·2	60·7
XII	Non-Ferrous Metals..	555·3	350·1	—	—
	Non-Ferrous Metal Products ..	—	—	128·5	60·7
XIII	Iron Ores	23,612·0	8,719·1	198·1	55·0
XIV	Pig and Scrap Iron..	1,611·6	947·6	—	—
	Machines, Vehicles, Rail Tracks ..	—	—	3,621·5	1,365·4
XV	Unclassified Articles..	304·2	121·7	177·8	90·0
b.	Industries with Import Surplus ..	43,371·3	16,899·7	6,413·5	2,433·0
XVI	Chemical Products	317·7	160·7	1,544·3	740·6
XVII	Stones, Earths, Glass, Clay products	1,116·9	227·6	6,202·0	1,431·0
XVIII	Coals and Coke	7,003·1	3,960·3	37,552·1	9,486·3
c.	Industries with Export Surplus ..	8,437·7	4,348·6	45,268·4	11,657·9
a–c	Total Raw Materials and Goods .. = 100%	62,619·8 100·0	27,142·3 43·3	51,854·5 100·0	14,162·7 27·3

In 1938 Germany imported 62,619,800 metric tons of commodities, of which 27,142,300 tons came from Overseas Countries and the Allied Empires. The import blockade would reduce Germany's foreign supplies by roughly 43·3% of her peace-time total. Contraband interception would cause shortages of her supplies in foodstuffs, textile fibres, hides and skins, mineral oils, india rubber and ores of all kinds, varying between 25% and 75% of the total imports for each individual industry.

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[1] The very knowledge of such interception of German goods to and from Overseas Countries and Allied Empires would cause a considerable reduction in "actual" shipments.

In view of these shortages Germany might have to restrict her domestic consumption or to reduce her exports of finished goods which contain these raw materials. In either case surplus capacity would arise in her finished goods industries, which in turn would reduce her import requirements of certain raw materials and hence minimise the losses resulting from the import blockade. In so far as Germany could compensate for her losses by increased supplies of raw materials from Neutral States, the import blockade would not have the above-mentioned effects. To increase her supplies from Neutrals, would, of course, depend on Germany's ability to pay, either in free exchange or by diverting her exports of finished goods, and on the Neutrals' ability to increase their exports or on the Neutrals' willingness to accept German finished goods.

After four months of war the Allies supplemented the import by an export blockade. For it was obviously realised that the toleration of German exports to Overseas countries provided Germany with free exchange, by means of which she was able to increase her purchases of raw materials from Neutrals. The immediate effect of this additional measure was to worsen Germany's foreign exchange position, and to force Germany to re-orientate her exports to Neutrals. To the extent that Neutrals were unwilling to accept more finished goods from Germany, or unable to increase their exports of raw materials to Germany, there would with necessity arise surplus capacity in a great number of important German industries. The combined effects of the import and export blockade may now be determined with reference to each individual industrial group. (*See* Table VI.)

I—III. FOOD AND DRINK INDUSTRIES: Germany's exports in these branches of industry are negligible. The shortages of fat and cereal supplies caused by the import blockade amount to 5·9 million tons, or over 60% of her total foreign supplies. In the same year of 1938 the Mediterranean countries alone had an export surplus in these commodities of 6.6 million tons and Russia exported 1.1 million tons. Considering that Poland too is an exporter of meat products and cereals, it will at least physically be possible for Germany to minimise her losses by increased imports from Neutral States, provided she has the means to pay for these imports.

IV. Textile and Clothing Industries: Germany is an exporter of finished textile products. The interception of 37,800 tons of imported yarns and piece goods will reduce Germany's export of finished goods from 76,400 to 38,600 tons. The waste involved in making yarns from different textile fibres is estimated at between 4% and 10%. Hence the net effect of the blockade of her textile fibres will be to wipe out completely Germany's exports of finished goods and to reduce her home consumption of clothing, stockings, ropes, hats, etc., by approximately 580,000 tons. Increased Russian supplies of flax may neutralise a fraction of Germany's textile shortage, without noticeably minimising the detrimental effects of the blockade in these branches of German industry.

V. Leather Industries: Germany is a net importer of hides, skins and of leather products. The interception of more than 100,000 tons of skins and leather goods will cause roughly 62% of surplus capacity in all German leather consuming industries. Account must be taken, however, of the terrific increase of imported living animals into Germany during the last four years. The slaughtering of these animals may temporarily reduce German import requirements of hides and hence minimise the effects of the interception of hides and skins as contraband. In addition, most Neutral States can increase their exports of these products.

VI—VII. Paper and Timber Industries: Germany is an importer of wood for pulp, of crude and half-finished timber, but an important exporter of paper and paper goods, of plywood, brushes, sticks, toys and instruments. The interception of 870,000 tons of timbers for various purposes corresponds to less than 20% of her total imports and as total imports account for less than 20% of domestic consumption, we may conclude that the import blockade will curtail total domestic raw material requirements by less than 4%. No doubt Germany can easily neutralise these losses by increased supplies from the Baltic, Russia and the South East European States. On the other hand, the export blockade on the finishing industries, based on these materials, may be much more effective. For the interception of 280,000 tons of finished paper and timber products will cause a considerable loss of foreign exchange to Germany. The resulting surplus capacity can scarcely be curtailed, because most Neutral States are self-sufficient in these products. In view, however, of fairly adequately obtainable supplies of raw timber, it is conceivable that the raw material shortages in the textile and leather industries will be reduced by a wider use of paper in clothing and footwear, as it happened in the last war. And to that extent the surplus capacity in the paper finishing industries will be reduced.

VIII. Rubber Industries: Germany's rubber-consuming industries depend almost entirely on foreign supplies of india rubber. The import blockade reduces these supplies by 71,400 tons, i.e., to roughly 30% of normal requirements. Years ago Germany made desperate efforts at developing synthetic rubber, but there is no evidence that the present domestic production suffices to compensate for the losses caused by the import blockade.

IX. Phosphates: Germany is an important importer of crude phosphates. Through the import blockade she is cut off from the supply of 900,000 tons, which is equal to 90% of her normal requirements. As regards Thomas phosphates and certain phosphate fertilisers, German imports and exports are equal in tonnage, but Germany is an exporter of nitrate manures and fertilisers and in so far as the exported products can be used in place of imported crude phosphates, it will be possible to minimise the severe effects of the import blockade.

X. Mineral Oils and Technical Fats: Contraband interception will reduce the supplies of crude and refined mineral oils, oil-fruits for technical purposes, etc., by 2,556,000 tons, or by roughly 50% of Germany's normal imports. These shortages are particularly severe since it is unlikely that consumption can be reduced in war time. In fact, Friedensburg, the German expert on "Wehrwirtschaft", estimated in 1937 that Germany's war-time requirements would be in the region of 20,000,000 tons. Even if Russia and Rumania were to divert the whole of their exports to Germany (roughly 5,500,000 tons) and if German domestic oil production from coal were to reach its 5,000,000 tons limit (as planned in the Four Years Plan) Germany would hardly be able to withstand the strain of an intensively fought long war. The present moderation in the use of her air force naturally keeps the oil requirements much below Friedensburg's estimates. Hence the shortages caused by the import blockade may be made good by increased imports from Neutrals and by intensified domestic oil production from coal.

XI—XII. Non-Ferrous Industries: The savings in non-ferrous metals (copper and aluminium) of 60,700 tons, as a result of the export blockade, reduces the metal shortages caused by the import blockade to 290,000 tons. This lack of foreign supplies will not only wipe out Germany's exports of non-ferrous products but also lead to a severe restriction in the home consumption of these products. The import blockade is all the more damaging if we add to the shortages of metals, the shortages of non-ferrous ores. Thus Germany will receive 82% less of manganese ore, 55% less of copper ore, 70% less of lead ore, 50% less of zinc ore, 55% less of chrome ore, 51% less of nickel ore, 14% less of pyrites, 8% less of bauxite and 54% less of all other non-ferrous ores. (All percentages are based on Germany's foreign supplies in 1938.) It is certain that Germany can increase her imports of manganese ore from Russia and that the South East European States may be able to somewhat increase their exports of copper, lead, zinc, nickel and chrome ore, but by no means can they cover wholly German requirements. No doubt, there are large deposits of all these ores in the South Eastern region, but so far they have not been systematically extracted.

XIII—XIV. Iron and Steel Industries: The blockade on German exports of tool, leather, spinning and agricultural machinery, of locomotives, rail tracks, aeroplanes, vehicles of all kinds, of electro-technical and mechanical products, will first of all weaken Germany's foreign exchange position. It creates in each export section between 40% and 50% surplus capacity and corresponds to savings of 1,365,400 tons of high quality iron and steel. Against this must be set the import losses of pig and scrap iron, amounting to 950,000 tons, thus leaving a net balance of steel savings from the export blockade of 400,000 tons.

On the other hand, the blockade on imports of iron ores causes a shortage of 8,719,100 tons, which corresponds to roughly 2,500,000 tons of iron and steel. Thus the net effect of the import and export blockade may be estimated to result in a shortage of 2,000,000 tons of iron and steel supplies. In the meantime the new Hermann Göring works have been put into operation. It has been suggested that domestic production of steel is likely to increase by 4,000,000 tons. In so far as this tonnage can be produced, Germany will offset all losses arising from the blockade and she may be able to utilise the capacity in her finishing trades with a view to increasing her exports of machinery to Neutrals. If that were possible Germany would then be in a position partly to pay for the imports of raw materials and foodstuffs which the Neutrals are able to supply.

XV, XVI, XVII. COAL, CHEMICAL, STONE AND CLAY INDUSTRIES: These three are mainly export industries and, unlike most others, they are only to a small extent dependent on foreign supplies of raw materials. Hence uninterrupted sales of these products provided Germany with significant amounts of free exchange. The introduction of the export blockade stops this remunerative channel and except for small quantities of chemical, glass, clay and porcelain goods, Germany will scarcely be able to increase, to any extent, her exports of these commodities to the Neutrals. The case for coal is slightly different. Both the Baltic as well as the South East European States can absorb greater amounts of coal. Moreover, the export blockade of coal only forestalls a restriction of some exports which possibly would have taken place anyway. For the increased exploitation of the Salzkammergut iron ore deposits and the production of oil from coal has necessitated a greater utilisation of German coal resources for domestic purposes.

CONCLUSION: We have related Germany's foreign trade development during the last ten years to the political and economic objectives of her present rulers. Self sufficiency as a means in the formation of a "Wehrwirtschaft" has partly been realised. In view, then, of Germany's smaller volume of foreign trade and in view of the re-orientation in the direction of that trade towards the Neutral States, it is safe to conclude that Germany is less vulnerable to foreign interference than she would have been in 1929. Even so, it has been shown that under existing war conditions, the Allied Powers blockade of German imports and exports creates serious problems for Germany in her execution of this war. Despite the reduction of her import losses through the stoppage of certain export possibilities, Germany will in the course of the war be confronted by serious shortages in textile fibres, wool, rubber, hides and skins, nickel, lead, tin and copper. Whether the lack of these supplies will force Germany to an early conclusion of the war will depend on three conditions: (1) On the inability of all Neutral States to supply Germany with precisely those commodities which she requires. (2) On the unwillingness of these States to accept those products which Germany would like to export. And on their unwillingness—in view of Germany's lack of free exchange—to permit the accumulation of frozen balances due to them in the clearing. Finally (3) on the trade policy of the Allies. For if the Allies were to increase their purchases from Neutral States by offering free exchange, there can be little doubt that the Mediterranean States anyway would gladly reduce their trade connections with Germany.

Book Reviews

The Theory of Prices. By ARTHUR W. MARGET. Prentice-Hall, Inc., New York. P. S. King & Son, Ltd. 1938. xxv + 624 pp. $6.00. $4.50. 18s.

In this work Professor Marget sets out to vindicate the traditional approach to monetary problems in face of the criticism it has received from the exponents of newer theories—particularly Mr. Keynes. At the same time the war is carried with vigour into the enemy's camp.

A work of this kind is not to my mind uncalled for, and Professor Marget has high qualifications to undertake it. Yet I must say at once that I have found much of Professor Marget's discussion unprofitable. Necessarily the issue is often whether one theory is to be regarded as *supplementing* another or as *replacing* it; and this may be merely a question of emphasis about which it is hardly worth while to be very polemical. Apart from this, there are two special features in the way in which the discussion is conducted which rather impede a clarification of the issues. One is that the main argument of this volume (the first of two) is directed against the positions adopted by Mr. Keynes in the *Treatise on Money*. Since Mr. Keynes no longer regards this as giving the most satisfactory exposition of his ideas, the minute criticism to which it is subjected seems more than a little otiose. The other is that the second term of the comparison—the traditional or orthodox doctrine—is interpreted by Professor Marget in a sense which seems to differ from that intended by Mr. Keynes in his attack. For Professor Marget traditional doctrine is represented by the best ideas to be found in the writings of the masters; Mr. Keynes' bogey on the other hand appears to be constituted of certain habits of mind inculcated by latter-day text-books. Professor Marget may succeed in showing that insufficient familiarity with monetary literature has led Mr. Keynes to do less than justice to his predecessors. But this is not a point of much importance to the rest of the world.

Professor Marget's main thesis is that the use of the so-called quantity theory equations is not dependent upon the truth of any particular theory about the causal relations between the factors which they assemble. Granted that Fisher's equation, for example, is true, any influence affecting general prices must work through, or be reflected in, changes in M, V or T. Starting with these, therefore, we can always work back to the ultimate causes. It is only confusion of thought, according to Professor Marget, that leads those who object to some particular theory with respect to the determination of general prices to direct their attack against the equations.

The distinction between a method of approach, or way of setting up the problem, on the one hand, and a positive theory on the other, is not without validity. A particular method of approach may prove useful for more than one theory. But it would surely be going too far to say that the method of approach and the theory are quite independent, so that changes in the latter need never call for changes in the former.

The utility of equations of the Fisher or Cambridge type as a method of approach appears to me to be limited to circumstances in which the factors other than P can be regarded as mutually independent variables, each influenced in its turn by separate sets of conditions. They then provide us with a convenient way of classifying the underlying influences. If on the other hand these factors act on one another or are simultaneously affected by the same influences, other methods of approach may prove more illuminating and less cumbersome. Two examples may make the point clearer. Let us first take the case in which new money is put into circulation at a time of general unemployment and surplus capacity. Approaching the matter through the Fisher equation, we are led to say that the effect of the increase in M will be to raise P, except in so far as there is an increase in T. But since in these circumstances the expenditure of new money will almost inevitably increase production and therefore T, is it not more natural and less misleading to say that P will not rise except in so far as supply is not elastic ? As the second case let us consider the effect of a lowering of interest rates by the banking system. Interest rates do not appear directly in the quantity equations ; they have to be considered as factors affecting the supply of money M (or M' in the more elaborate formulations). But experience tells us that an increase in the volume of bank credit may not be accompanied by anything like a corresponding increase in expenditure. It is therefore necessary, if we use this equation, to follow the study of the effects of interest rate changes on M by an examination of what will be happening to V. Is it not simpler and more direct to proceed at once to study the effect of lower interest rates on new investment expenditure ?

The unprofitable roundaboutness which Professor Marget is prepared to recommend in order to retain the use of his equations is best illustrated, however, by the way in which he meets another criticism, namely that P, or the general level of prices, with which the ordinary equations are concerned is not of high significance in certain dynamic problems. Professor Marget recognises the need for the study of "partial price levels", but refuses to admit that this necessitates the abandonment of the equation method of approach. All that is necessary, he says, is to construct special equations in which the money balances held for certain purposes and their particular velocity of circulation are related to the appropriate transactions.

These criticisms relate to the use of the equations in handling certain dynamic problems. Naturally it is not denied that the equations are always true, nor that, like any other known truths, they may be of use in checking one's position in the course of an analysis. What is questioned is whether the isolation of the typical quantity equation factors always provides the most useful approach in studying processes of change. On the other hand, there is, I believe, a long-period sense in which the quantity theory, as a theory explaining how the quantity of money in conjunction with certain practices and dispositions with regard to the use of money fixes the scale of incomes and—given productivity—of prices, is still not only useful but indispensable. And in this application, the equations may also be useful.

Professor Marget's views on the merits of the different forms of equation are therefore of interest. With what he says concerning the relations between the " Cambridge " cash balance type of equation and the " Fisher " velocity of circulation type, I find myself generally in admiring agreement. But I am impelled to quarrel again with his preference for " transactions " equations as against " income " equations and his criticisms of the concept of " income " or " circuit " velocity.

Professor Marget's attitude here is mainly grounded on the principle that " no concept of ' velocity ' can be regarded as satisfying which is not in all respects strictly consistent with the methodological principles underlying the body of analysis designed to account for the size of cash balances relative to the outlay against which the cash balances are being held ". (It may be recorded that on this point Marget is very much in agreement with Keynes.) A second point is that the total amount of money needed to sustain a given volume of incomes will be affected by the use of money in non-income transactions, so that this part of the process of circulation cannot be left out of analysis. (I pass over the further objection that there may be differences between payments out of income and payments into income because, apart from that tiresome question of definition which has caused so much dispute, this difficulty does not arise for long-period theory.)

I can only state my reasons for differing very briefly.

(1) The second point is undoubtedly true, but is far from providing a good reason for rejecting the use of the concept of " income " or " circuit " velocity. It may be the case that certain English economists who have used " income velocity " have paid too little attention to the way in which this is affected by the use of money in intermediate transactions ; but this is not true of some of the continental economists, notably Dr. Lutz, and it is the specific advantage of the circuit analysis,

properly developed, that it provides a view of the process of circulation as a whole.

(2) Whilst it is essential to take account of the disposition of individuals towards holding money balances, it is not possible, I believe, to build up a satisfactory theory in the atomistic manner called for by Professor Marget's first principle. In some circumstances, for example, the reduction of money balances on the part of one set of persons will lead to a corresponding increase in the balances held by another set; in other circumstances this will not be the case; the individualistic approach does not tell us which to expect. Again this approach has tended to obscure the fact, evident to common sense, that an increase in the chain of transactions, through a vertical disintegration of production or the interposition of additional classes of middlemen, will automatically increase the rate of turnover of money. (I believe that all the best writers are now agreed that what may be expected to happen in this case is that transactions velocity will increase but not in proportion to the increase in the number of transactions to be performed (velocity of circulation of goods), and that therefore circuit velocity (and c.p. prices and incomes) will decline. Professor Marget accuses the exponents of "income velocity"—I think unjustly—of encouraging the belief that transactions velocity will always increase sufficiently to compensate the additional transactions. I charge the other side with inculcating the view that there is no natural tendency for transactions velocity to increase at all.

(3) Professor Marget appears to agree that for the purposes of monetary theory, a special importance attaches to those particular money payments which represent income payments—either payments into income or payments out of income—as contrasted with the payments involved in transactions other than "income" transactions. This surely is the crux of the matter. While the difficulty of defining it with precision may make the income concept of doubtful value in certain dynamic problems, I believe most modern economists find it indispensable to a significant theory of price equilibrium.

P. B. WHALE.

Central Banking. By M. H. DE KOCK. P. S. King & Son, Ltd. 1939. xiv + 354 pp. 15s.

All study of the art of Central Banking must be based upon exact knowledge of its institutional environment. Recently, however, changes in the relevant laws and conventions have been so numerous that it is difficult for the best informed student to keep abreast of them. To overcome this difficulty Mr. de Kock has given us "a survey of the central banking situation in the world at large" as it existed a year ago, based upon a comprehensive comparative study.

His analysis follows the customary classification—the Central Bank as the Government's banker, as lender of last resort, as controller of credit, etc.—and each chapter synthesises modern tendencies not only in such countries as England or the United States, but also in others where money markets have not yet been developed. As a work of reference for the facts about central banking Mr. de Kock's book possesses many virtues, and we may be grateful that so well-equipped an authority as the Deputy Governor of the South African Reserve Bank should have undertaken its compilation.

The book has, however, a second purpose which it is not able quite so well to fulfil. It seeks, by emphasising the limitations of the powers of central banks—legal, psychological and technical—to show the impotence of monetary policy to attain any social ends. This part of the book hardly goes deep enough to carry complete conviction. The ultimate issues of credit management, as distinct from those usually admitted by central bankers, do not clearly emerge ; and much space is given to quotations from other authorities which are not wholly assimilated to the argument.

Mr. de Kock's thesis is, however, that central bank control—for example, over the business cycle—is drastically limited, firstly by the non-monetary causation of the phenomena, and secondly by the looseness of the link between the central bank and current spending. But he fails to appreciate the need for a reply to the exasperated monetary reformer who asks, What then is the good of a central bank ? References to the dangers of political control are hardly enough if the alternative is the absence of any effective control at all.

Mr. de Kock has not, in short, provided the complete discussion of central banking which his title might suggest. But he has none the less given us a most useful compendium, in which student and monetary reformer alike can find the facts they need.

J. K. Horsefield.

Karl Marx : His Life and Environment. By I. Berlin. Thornton Butterworth, Ltd. The Home University Library. 1939. 256 pp. 2s. 6d.

Mr. Berlin's essay on Karl Marx fully maintains the standard of the collection in which it appears. Not only does it provide a most reliable summary of existing knowledge ; it is written with such expository skill and sense of philosophic and historical proportion that it must at once take high place among those few essays which have really deepened our knowledge of its difficult and elusive subject. Not the least of its many merits is its extraordinary detachment ; when you have finished reading it, it is difficult to say what Mr. Berlin's private convictions really are. In a study of Marx this is indeed a very high standard of objectivity.

Perhaps the one serious deficiency in Mr. Berlin's exposition is the comparatively small amount of space devoted to the more technical aspects of Marx' economic analysis. Mr. Berlin is probably right in regarding those wider and vaguer propositions which might be called the Marxian sociology, as historically more important and intellectually more interesting. Nevertheless it is difficult to agree with him when he argues that, whatever the validity of the Marxian theory of value, the theory of exploitation remains comparatively unaffected; and it is difficult to believe that Marx himself would have thought so. It is certainly possible to construct theories of class conflict which do not depend on the theory of surplus value. But much that is characteristically Marxian tends to disappear in the process; and it is doubtful whether in the end their implications are at all capable of assimilation by the Marxian propaganda. It is not easy for the Marxian to discard the ladder of economic theory by which he climbs to his sociological view point. For there are critical parts at which the main structure is actually built upon it.

The only other critical comment I have to make upon this truly excellent piece of work is that I suspect that, for all his caution, Mr. Berlin still tends a little to exaggerate the novelty of Marx' insistence upon the significance of the economic factor in historical causation. No one with any knowledge of the intellectual history of the last hundred years is likely to want to minimise the effect of this insistence on the development of thought since Marx wrote. But it is not at all true that the importance of the economic factor had not been stressed by other writers, as prominent in their day as Marx himself; and it is not at all certain that the development of thought in this connection would not have been saner and better proportioned if it had been their emphasis rather than that of Marx which had been the more influential.

" M. de la Fayette a dit quelque part dans ses Mémoires," once wrote one of these writers, " que le système exagéré des causes générales procurait de merveilleuses consolations aux hommes publiques médiocres. J'ajoute qu'il en donne d'admirables aux historiens médiocres. Il leur fournit toujours quelques grandes raisons qui les tirent promptement d'affaire à l'endroit le plus difficile de leur livre, et favorisent la faiblesse ou la paresse de leur esprit, tout en faisant honneur à sa profondeur." Tocqueville's dictum does not dispose of Marx—it was of course written before his emergence. But how profoundly it anticipates the effect of Marx on most of the work which he has influenced.

LIONEL ROBBINS.

Stalin: A Critical Survey of Bolshevism. By BORIS SOUVARINE. Secker & Warburg. 1939. xiv + 690 pp. 15s.

It is to be feared that, for many English-speaking intellectuals, the author of this book suffers from grave disabilities. He does not treat the starvation of hundreds of thousands of peasants as a matter of indifference. The relevance to his theme of that helpful maxim that you cannot make omelettes without breaking eggs is not persistently reiterated; and, far from being agreeably titivated by the contemplation of ruthlessness, he regards this quality with some distaste. And since, as a member of the Left, he brings a critical judgment to bear on certain phases of Russian policy, it is to be expected that it will be widely whispered that, together with André Gide, Eugene Lyons and many others, he has obviously been "got at".

If, however, one can bring oneself to ignore these drawbacks, it will be found that M. Souvarine has produced a work which throws considerable light upon the recent political and economic history of Russia. The book purports to be a biography of Stalin; but, in fact, it is nothing less than a history of communism in Russia, more detailed and more intelligible than anything else which has yet appeared. If it is read in conjunction with Dr. Borkenau's invaluable history of the third international, much that has hitherto been obscure in the vicissitudes of this bewildering movement, becomes clear. Indeed, if the reliability of history is to be tested by its capacity to enable us to understand contemporary events, then M. Souvarine deserves the highest classification. I do not think that anyone who had read these pages could have experienced the slightest surprise at the most recent development of Russian international policy. It is M. Souvarine's opinion that owing to the inefficiency of the top-heavy planning system and the dislocation caused by the incessant "purges", Russia is in no condition to undertake a major war. The bewildering changes in her foreign policy are therefore to be attributed in large part to fear—fear operating in an atmosphere of almost unbelievable ignorance concerning the outside world. This fits very well what has happened. Certainly it would be difficult to discover a more extraordinary exhibition both of diplomatic and military ineptitude than the present attack upon Finland.

It is perhaps as a revelation of the intellectual plane on which the mind of official Russia now moves that M. Souvarine's book is most remarkable. Those of us who are not to be numbered among the devout, have seldom entertained many illusions regarding the humanity of the present rulers of Russia or the success of their experiment in terms of human welfare. M. Souvarine is not the first disillusioned witness to unmask the horrors of the extermination of the Kulaks or the pretensions of the "Potemkin" power-stations, though few have done it so completely. But, even to complete sceptics, the cumulative effect of his description of the intellectual atmosphere of the *regime* must come as something of a surprise. Official life in Russia has never been distinguished by very high intelligence; but the state of affairs revealed by M. Souvarine is of a kind for which there can surely be no precedent in the history of any community of any degree of administrative complexity, save perhaps in the most decadent periods of the Byzantine Empire. This is not merely the case in political and economic discussion ; one expects that to be a bit crabbed. But the process of stupidization seems quite ubiquitous : one cannot think of anything about which they do not talk the most indescribable rubbish. Thus the paintings of Cézanne are described as representing " the epoch of heavy industry "—(Cézanne, who fled from machines of all kinds and never painted anything nearer heavy industry than the old chimney at L'Estaque !). It is claimed that " the full significance of Kantian theories can be finally embodied in contemporary science only in the light of comrade Stalin's last letter ". Again, it is asked, " Can anyone really write on anything unless he knows his Stalin ? Never. Without Stalin no one can understand anything or write anything of interest." Perhaps the choicest specimen is the exhortation of a highly placed comrade to a congress of chess players. " We must finish once and for all with the neutrality of chess. We must condemn once and for all the formula ' chess for the sake of chess ' like the formula ' art for art's sake '. We must organise shock brigades of chess players and begin the immediate realisation of a Five Year Plan for chess." One feels that one is listening in to the gibber of a collection of robots wound up by the village imbecile. Talk about the " opium of the people " . . . But one can be pretty sure, after the experience of the last few years, that sooner or later there will be high English and American authorities who will take it all very seriously and attribute to its authors intentions of unprecedented profundity.

How necessary was the débacle of Russian communism ? M. Souvarine, although no Trotskyist, is inclined to accept the Trotskyist thesis of a betrayal of the Revolution. Stalin appears as the Judas of the old Bolsheviks. This may be so ; even if one discounts 50 per cent. of what M. Souvarine writes, " the master-surgeon of history " does not emerge as a very savoury figure. But the doubt remains ; is not something of this sort inevitable when, in a community of such a size, there is ultimately only one property owner and one employer ? Would men much less inured to murder and oppression than are the Russian leaders succeed in avoiding a like suppression of hostile criticism, a like collectivization of taste and opinion, if the system were to be made to work at all ? Reasonable men may well differ about the answer. But the fact that the actual development of events has corresponded so closely to the expectations of those who have attempted to analyse the economic and sociological implications of complete collectivism, does give some substance to the suspicion that, in the last analysis, Stalin is as much the creature of the regime he rules as the betrayer of the ideals of those who projected it.

LIONEL ROBBINS.

State Banks for India. By ANWAR IQBAL QURESHI. Macmillan & Co. 1939. 238 pp. 12s. 6d.

The main object of Professor Qureshi's study of State Banks and Land Mortgage Credit Institutions in Australia, New Zealand, South Africa and the United States is to demonstrate that it is possible to mobilise credit resources in such a manner as to free even the small agriculturalist from an undue burden of debt, and to finance agriculture as efficiently as the joint stock system finances modern industry. In other respects a *laissez faire* economist, Professor Qureshi maintains that, in this sphere, State action is necessary and harmless, and he concludes by drawing up a detailed scheme for Provincial State Banks in India, which should undertake three main functions: i.e. (1) To provide additional facilities for commercial bankings; (2) to organise a supply of credit to agriculture and industry; (3) to provide loans for housing.

Professor Qureshi's interests are practical and administrative, other than theoretical, and the bulk of his work consists of a detailed description of the relevant credit machinery in the various countries from which he draws his examples. On the theoretical side he has little new to say, but brings out clearly the urgent need to place the financing of agriculture on a business footing in India, so that the Indian cultivator shall no longer be a necessitous borrower from the usurious moneylender, but rather an "entrepreneur" utilising the resources of the investing classes. On the administrative side he recommends that the State and Land Banks should receive a Governmental guarantee, but should be managed by expert *ad hoc* bodies, appointed by the Government, and that the capital required for long-term loans should be raised by the issue of debentures. By this means he hopes to mobilise India's capital resources, which (in his opinion) have hitherto tended to run to waste owing to the prevalence of the hoarding habit, and thus to secure financial independence, and through the latter a greater degree of economic independence and security. The book contains much useful information on a subject of great importance to all who are interested in the economic development of India and of other countries which are in a similar stage of economic development.

VERA ANSTEY.

Japan's Economic Offensive in China. By LOWE CHUAN-HUA. George Allen & Unwin. 1939. 175 pp. 7s. 6d.

Mr. Chuan-Hua, in his short and readable little volume, has provided a lucid and well-informed account of Japan's political and economic aims, the present economic position in China and Japan, the economic effects of the Sino-Japanese War, and of the means adopted by Japan to further her programme of "economic cooperation" in the Far East, which—he suggests—is really a euphemism for Japanese domination of the Far East. The outstanding merit of the book is the way in which Japan's economic policy, including currency and exchange control, is explained in non-technical language, so that its implications and results can be clearly appreciated even by those unversed in economic terminology.

In particular Mr. Chuan-Hua is concerned to emphasise Japan's far-reaching economic motives and designs, and the imminent danger that she will oust Western interests and influence from the Orient. At the same time he points out weaknesses in the Japanese policy, and stresses the losses and strain involved by the present conflict. He concludes that—whether or not Japan succeeded in securing and maintaining complete domination in China—" if the Third Powers remain passive and permit Japan to usurp all legitimate foreign interests and privileges in the Far East, they may some day find it utterly impossible to recover by force what they can still save by pacific but decisive means ". The wisdom of the implied advice has received support since this book was published from the re-opening to foreign traffic of the river Yangtse, resulting from the need to placate the United States in order to secure the renewal of that country's commercial treaty with Japan. Japan cannot achieve her aims in the Far East unless her foreign trade is maintained, and she cannot maintain her foreign trade if she loses the American market—much less if she loses her markets in America and in the British Empire.

VERA ANSTEY.

The Economics of Building. By H. W. ROBINSON. P. S. King & Son, Ltd., London. 1939. xii + 162 pp. 10s. 6d.

Dr. Robinson has atttempted to fill a serious gap in the literature of applied economics by writing a book on the building industry. Any such attempt must be welcomed even if it is not entirely successful. The plan of the book is promising. A brief account of the structure of the industry is followed by a theoretical analysis of the factors determining the volume of building. The analysis begins with a stationary state and takes dynamic factors into account later. The last four chapters of the book are devoted to testing the theoretical conclusions by statistical investigation of the course of building activity since 1801.

The theoretical chapters are considerably more satisfactory than the statistical. The second and third chapters, " A Stationary State with respect to Building Activity " and " A Dynamic Economy, Demographic Factors," are lucid and well arranged, though I think that in the latter Dr. Robinson omits to emphasise sufficiently the importance of his assumption of a constant average real income and income structure. This omission may account for his confident conclusion in Chapter VII, which is devoted to a statistical discussion of the influence of population changes on building activity, that "Demographic factors have been the long run determinants of building activity" (p. 121). Can he really be so certain about this considering that he has taken no serious account up to this point of changes in real income per head during the nineteenth century? It is at least conceivable that, if the trend of real income per head had been different, even though the same number of houses *might* have been built, their sizes might have been different. The typical house might have been the one- or two-roomed house such as prevails in Scotland! This is surely a question not without relevance to the volume of building activity or the size of the industry. To return to the theoretical chapters; Chapters IV and V deal with the dynamic factors affecting the supply and demand curves for buildings. In general the analysis is very clear and appropriate emphasis is laid on the distinction between the demands for buildings for investment and for occupation, respectively. It seems to me, however, a pity that Dr. Robinson did not make any serious attempt to discuss the question of whether there is any theoretical justification for believing in self-generating building cycles.

The statistical analysis in the last part of the book will cause many readers to suspect that Dr. Robinson is more of a statistician than an economist. It suffers alternatively from excessive confidence in interpreting the figures and apparent unwillingness to interpret them at all. This is a great pity, as Dr. Robinson has succeeded in making a comprehensive and useful collection of statistics. I have already mentioned his over-confidence in interpreting his data in Chapter VII, but this is followed in Chapter VIII by a collection of data (pp. 122–132), which to all intents and purposes he refuses to interpret at all. The explanation of more than forty series occupies barely six pages of text. After this excessive restraint, Dr. Robinson allows his enthusiasm for the higher statistics to run away with him with unfortunate results. His purpose is to analyse the relative influences of changes in rents, interest, building costs and real income on building activity from 1924–1937. He confines himself to private building and correlates $\frac{\text{Rent Index Number}}{\text{Interest Index No.} \times \text{Building Costs Index No.}}$ with an index number of house building by private enterprise. There are, however, considerable difficulties involved in such a procedure. What would be the appropriate rent series? In effect there has been no market in non-working class houses to let, except actually inside towns, owing to the almost complete absence of a supply of houses to let in suburban areas. It might indeed be argued that rent has become of minor importance over a great part of the middle-class market for new houses; but in any case it seems that an essential part of any relevant rent index is missing. Dr. Robinson is apparently unconscious of such difficulties, for he simply uses the Ministry of Labour's index of working-class rents without any discussion of the possibility that rent restriction and Local Authority building may have affected this index! Still more distressing, perhaps, he achieves a correlation of .961 (p. 141). The plain economist may well feel suspicious. Examination of the series used shows that Dr. Robinson has in fact been lucky, since the changes in the rent index are so small relatively to changes of the interest index multiplied by those of the building cost index that a fairly high correlation would have been found if any constant had been substituted for the rent index! It is only fair to add that when Dr. Robinson applies a similar type of analysis to commercial and industrial buildings, his conclusion, that these types of building are influenced more by business activity than by interest or building costs, seems to be valid as well as interesting.

This review may appear unduly critical, but Dr. Robinson's book is very disappointing. He seems to have allowed himself too little space, and possibly too little time also, to utilise his statistics adequately. I feel, too, that he should at least have explained why he has almost entirely ignored the most important institutional developments in the house market between 1924 and 1937, viz. the growth of building societies, local authority building and direct government interference in the form of the continuance of rent restrictions.

MARIAN BOWLEY.

The History and Mechanism of the Exchange Equalisation Account. By LEONARD WAIGHT. Cambridge University Press. 1939. xiv + 191 pp. 8s. 6d.

Mr. Waight's book is divided into three parts. In the first and shortest he gives a summary of the position before the setting up of the Exchange Equalisation Account, of the events which brought it into existence, and of its methods of operation at various dates. In the second part, he traces the Account's relationships with the banking system and the money market, illustrating his exposition in some detail by reference to the capital movements from and to France in the years 1936–38. The third part is devoted mainly to a more detailed examination of the technique of the Account and of the effects of its operations both in the gold and foreign exchange markets, and concludes with an appreciation of its work. There is a convenient appendix, giving the texts of the relevant Acts of Parliament, etc., and some useful statistics.

The author makes little attempt to break new ground. As he states in his preface, the book is designed mainly as a text-book. Unfortunately, the art of explaining the working of complicated institutions in such a way as to make them intelligible to the non-expert is almost as rare as the power of making advances in knowledge, and Mr. Waight has not yet fully achieved it. It is to be feared that some sections at least of this book will serve only to strengthen the preconceived views of the average uninformed reader that the subject is incomprehensible to ordinary mortals.

Even the reader who already has some knowledge of the subject will not be able to follow all Mr. Waight's arguments. One example out of several may be given here. In Chapter VII he is describing the effects on the banking system of a purchase of gold by the Account to offset the consequences of an inflow of foreign funds. He first argues that, if the foreigners hold their sterling in the form of bank deposits, the purchase of additional treasury bills by the banks to create the necessary additional deposits will lower their cash ratios. From this he argues that, if the foreigners then use these balances to buy stocks and shares or other real assets, the banks' cash ratios will still remain at their lower level; and from this again he deduces (p. 54) "the following principle: When foreigners acquire sterling from the E.E.A. in exchange for foreign currency and utilise that sterling for the purchase of War Loan, for instance, from an English holder who puts money on deposit instead of buying, say, British American Tobacco Company shares, the effect is deflationary. The crucial point is the creation of a deposit out of funds provided at some time by the E.E.A. If there is no continuing deposit after the acquisition of assets by the foreigner the effect is neutral."

This remarkable contention, that the creation of bank deposits to finance the purchase of long-term assets is deflationary, rests upon two *non-sequiturs*. Firstly, it assumes that a fall in the banks' cash ratio is necessarily deflationary, even though it is accompanied by a rise in their quick-assets ratio; and secondly it makes the assumption that a rise in the short-term rate of interest is deflationary even though it is due to a diversion of funds from the short-term to the long-term market and is therefore accompanied by a fall in the long-term rate of interest. The first of these developments may be either deflationary or inflationary, according to the level of the existing cash ratios; the second is certainly inflationary, as is obvious if we consider that it gives the banks the opportunity to make their position more liquid by exchanging some of their securities for bills without running the risk of depressing security prices.

F. W. Paish.

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The Valuation of the Social Income

By J. R. Hicks

The Social Income consists of a collection of goods and services valued in terms of money. Its precise definition thus involves two problems : one of the correct enumeration of the real goods and services to be included, and one of the money values by which this heterogeneous collection is to be reduced to a common denominator. I am concerned in this paper with the second of these problems.

The practical statistician has generally been content to take it for granted that every commodity entering into the aggregate should be valued at its market price. I want to ask : what is the basis for this valuation ? Does it hold without exception or are there exceptions ? Are the prices we use for valuation prices in their own rights or do they stand for something else (say marginal utilities or marginal costs) to which market prices are taken as approximations ? These questions ought to be answered before we can have a clear idea of what National Income calculations mean. And they need to be answered before we can settle some of the disputed points about actual computation.

I have myself been led to think about these questions as a result of the discussions on one of these disputed points. As is well known, Mr. Colin Clark adds the proceeds of indirect taxation to the total of declared incomes before arriving at his aggregate ; Professor Bowley has held that such an addition ought not to be made. In an earlier paper to which I myself contributed[1] an attempt was made to deal with this difficulty by the usual method of enumeration —by considering what real goods and services ought to be included in the aggregate, and working out the way in which these goods and services will be reflected in the sum of incomes. At the time this treatment seemed to me sufficient, but I have been brought to realise that it did not go deep enough. Professor Bowley has himself performed the same enumeration and in his hands it leads to a different result.[2] A close comparison shows that the difference between us is purely one of valuation, of the values we put upon the commodities included. Such a difference is extremely likely to come up over questions of Public Finance, since in this field the ordinary rule of weighting by market prices tends to break down. Taxed commodities have two prices (those including and excluding tax) so that in their case the rule is ambiguous; while the public services, upon which much of the proceeds of taxation are spent, are not sold on the market—so they have no market prices at all.

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[1] J. R. and U. K. Hicks, " Public Finance in the National Income " (*Review of Economic Studies*, February, 1939).

Thus it is only possible to achieve a final solution of this particular problem if we are prepared to go back to the general issue and enquire into the whole *rationale* of valuation in National Income calculations. When we do this it seems to transpire that the right system of weights to be used for valuing the National Income depends upon the purpose for which the calculation is to be used. As National Income calculations are used for all sorts of purposes, we may have to be prepared to use more than one system of weights. It is not at all obvious without examination that the same system of weights which is appropriate for comparing real income over time is also appropriate for studying questions of distribution. There may be more than one *Money Value of the Social Income*, each corresponding to a different purpose of calculation. At least we ought to be aware of this possibility from the start.

Let us therefore begin by selecting some one possible purpose and proceed to enquire, as carefully as we can, what system of valuation is appropriate to that purpose. Afterwards we can enquire how far that system is appropriate to other purposes.

1. SOCIAL INCOME AND ECONOMIC WELFARE. There can be little doubt what is the purpose with which we ought to begin. The most thorough theoretical analysis of the Social Income is that given by Professor Pigou in the *Economics of Welfare*; and Professor Pigou is only the leading representative of a long line of economists who have sought in the Social Income an index of economic welfare,

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[1] "The Measurement of Real Income" (*Manchester School*, April, 1940). Although I am going to disagree with this paper of Professor Bowley's, I should like to express my appreciation of what I have learned from it.

of the wealth of nations. We have little choice but to follow in this tradition.

We are, however, at liberty to reinterpret it to some extent. For my own part, I should distinguish the question of economic welfare from any conceivable broader question of welfare in general, by the rule that comparisons of economic welfare must proceed under the hypothesis of *constant wants*. It is only under this hypothesis that quantitative comparisons are possible. In order to be able to compare the positions of a particular individual in two different situations, we must assume that his wants are the same in the two situations. If this assumption cannot be granted, the question whether he is better off in one situation or in the other loses all economic meaning. If he has undergone a spiritual conversion in the interim, so that he has given his goods to feed the poor, the question of his relative well-being in the two situations is a spiritual question, not an economic one. Comparisons of economic welfare are comparisons of welfare in general, under the assumption of unchanged tastes. They are significant so far, and only so far, as we *judge* the assumption of unchanged tastes to be a tolerable assumption with reference to any particular actual comparison. Is it near enough to the truth for the results of such assumption to be interesting?

It is as a means of giving precision to this assumption of unchanged tastes that we have to introduce the concept of a scale of preferences. We say that tastes are unchanged between two situations if any preference for one collection of goods over another, which holds in one situation, holds also in the other. This assumption can be expressed by assuming a given utility function or sufficiently by assuming given indifference surfaces.

One consequence of this interpretation ought to be noted before proceeding. A given indifference map necessarily refers to a given number of goods, this number being reflected in the number of dimensions in which the indifference map is drawn. If we assume a constant indifference map in *n* dimensions, we are automatically assuming that the individual's satisfactions are not affected by anything which happens to the availability of goods not included in the list. Now the list of sorts of goods to be included is to some extent arbitrary, and it is in fact conventional to exclude certain things " not brought into relation (perhaps one should say *close* relation) with the measuring-rod of money", household services and the like. It is also conventional to pay no attention to changes in the amount of labour effort needed to acquire the collections of positive utilities. Nevertheless, it is important to observe that we are at liberty to frame our definition of *constant wants* more or less strictly, so that in cases where a narrower definition would be obviously intolerable, something can sometimes be done about it by extending the range of sorts of utilities (or disutilities) to which the definition refers. We shall encounter some important instances of this later on.

2. THE COMPARISON OF INDIVIDUAL SATISFACTIONS. I shall now proceed to set out very briefly the fundamental propositions upon which the use of the social income as a measure of economic welfare depends. These propositions are not new; I shall introduce only a small degree of refinement into Professor Pigou's demonstration; but since later researches[1] have enabled us to put a slightly sharper edge upon the demonstration (and for later purposes we shall need all the precision we can get), I think I must go over the ground again.

The logical problem which presents itself is as follows. In Situation I market prices are such and such, and the individual buys such and such quantities. In Situation II market prices are such and such, and the individual buys certain other quantities. From these data, can one say that one position or the other is a preferred position?

On the indifference diagram (Fig. i) we have given the price-lines P_1P_1 and P_2P_2 (indicating the opportunities of purchase open in the two situations) and also the positions Q_1 and Q_2 actually chosen on those price-lines. *We do not know the actual positions of the indifference curves.* But we do know that Q_1 and Q_2 are the positions actually selected in these two situations, so that the indifference curves through Q_1 and Q_2 must touch the respective price-lines at those points. Further, they must be convex towards the axes at those points and cannot intersect their corresponding price-lines anywhere.

It follows at once that the indifference curve through Q_1 must lie wholly to the right of the price-line P_1P_1. Thus all positions which are preferred to Q_1 must lie to the right of this price-line; whence it follows that all positions to the left of P_1P_1 must be inferior to Q_1. It does *not* follow that any position to the right of P_1P_1 will be preferred to Q_1; it will be if it contains more of both goods than Q_1 does, since both goods are supposed to have positive utilities; but otherwise the question depends upon the curvature of the indifference curve through Q_1, and on that subject we have no information.

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[1] See particularly R. Frisch, "The Problem of Index-Numbers", *Econometrica*, 1936.

In the diagram as we have drawn it, Q_2 is necessarily preferred to Q_1 because Q_1 lies to the left of the price-line P_2P_2.

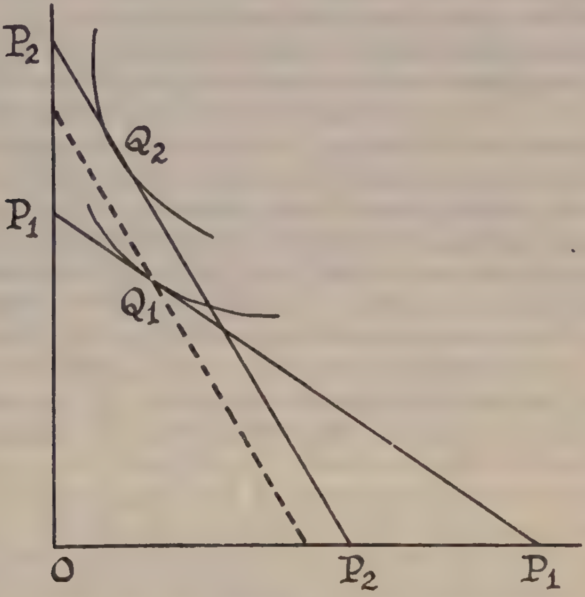

Fig. i

Let us now proceed to state this condition in less geometrical language. If Q_1 lies to the left of P_2P_2, the price-line[1] through Q_1 parallel to P_2P_2 (which expresses the opportunities open to an individual, confronted with the same prices as at Q_2, but with an income just sufficient to purchase the collection Q_1, if he chose to do so) must lie to the left of P_2P_2, and therefore represent a lower income. Therefore if p_1, p_1', are the prices of the two goods in the first situation, p_2, p_2', in the second situation, q_1, q_1', q_2, q_2', the corresponding quantities actually chosen, we shall know that the second situation must be preferred to the first if

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[1] Dotted in the diagram.

$$p_2q_2+p_2'q_2'>p_2q_1+p_2'q_1' \qquad \text{i.e., } \Sigma p_2q_2>\Sigma p_2q_1$$

and that the first situation must be preferred to the second if

$$p_1q_1+p_1'q_1'>p_1q_2+p_1'q_2' \qquad \text{i.e., } \Sigma p_1q_1>\Sigma p_1q_2$$

Although the above argument has been written out with an eye upon a diagram in which only two goods were represented, a little re-examination will show that this limitation has never been actually used. Precisely the same argument will hold for any number of goods. But this general validity may be made more convincing if the argument is checked over in another way.

So long as all the goods in question have a positive utility (a condition implied by the downward slope of the indifference curves), it is clear that the individual will always be better off in Situation II than in Situation I if the quantities of goods which were available in I are still available to him, though he rejects them for a preferred collection. This will be the case if the value of his purchases at II, valued at II prices, is greater than the value of his I purchases, also valued at II prices. For this condition ensures that the I collection of goods is still available in the II situation, though it is rejected in favour of the II collection.

The failure of the opposite inequality to be significant can readily be seen in the same way. If $\Sigma p_2q_2<\Sigma p_2q_1$, the individual will be unable to purchase the I collection of goods in the II situation; if he tries, he will fall short somewhere, and get less of some of the goods. But this does not establish that he must be worse off in Situation II. All it shows is that there is a collection of goods available in the II situation which is inferior to that actually chosen in the I situation; but since it is also inferior to that actually chosen in the II situation (for it is not the position which is actually chosen), all we learn is that there is a position inferior both to the I and to the II positions; but that does not enable us to compare these positions directly.

3. Social Comparisons. We have thus established the validity of the criteria for any number of goods, but so far we have only established it for a single individual. What can be done about generalising the test so as to make it applicable to society as a whole?

It is best to begin by taking the criteria as they stand and enquiring what meaning they have when they are applied to a group of individuals. The p's are still market prices, the q's are now the total quantities of the various commodities acquired by the group as a whole. The Σpq's can still be calculated. What does it signify if $\Sigma p_2q_2 > \Sigma p_2q_1$?

It should first of all be noticed that since this condition refers only to the total quantities acquired, it can tell us nothing about the distribution of wealth among the members of the group. There may be a drastic redistribution of wealth among the members and the aggregates will remain exactly the same. Thus what the condition $\Sigma p_2q_2 > \Sigma p_2q_1$ tells us is that there is *some* distribution of the q_1's which would make every member of the group less well off than he actually is in the II situation. For if the corresponding inequality were to hold for every individual separately, it would hold for the group as a whole.

As compared with this particular distribution, every other distribution of the q_1's would make some people better off and some worse off. Consequently if there is one distribution of the q_1's in which every member of the group is worse off than he actually is in the II situation, there can be no distribution in which everyone is better off, or even as well off. Thus if we start from any actual distribution of wealth in the I situation, what the condition $\Sigma p_2q_2 > \Sigma p_2q_1$ tells us is that it is impossible to reach, by redistribution, a position in which everyone is as well off as he is in the II situation.

This would seem to be quite acceptable as a definition of increase in real social income. Let us say that the real income of society is higher in Situation II than in Situation I, if it is impossible to make everyone as well off as he is in Situation II by any redistribution of the actual quantities acquired in Situation I. If this definition is accepted, our criteria can be applied to it without change.

4. THE CRITERIA IN INDEX-NUMBER FORM. The practical application of our criteria is, of course, modified by the fact that we do not ordinarily proceed by counting the quantities of goods acquired at two dates and valuing them at various sets of prices. What we do is to reckon the total money expenditures and correct for changes in prices by the use of price index-numbers. For this purpose we need a little rearrangement of our formulæ.

Let E $(\Sigma p_2q_2/\Sigma p_1q_1)$ be the index-number of money expenditure at the second date, using the first as base.

Let L $(\Sigma p_2q_1/\Sigma p_1q_1)$ be the index-number of prices on Laspeyre's method (weighting by the quantities of the first date). Let P $(\Sigma p_2q_2/\Sigma p_1q_2)$ be the index-number of prices on Paasche's method (weighting by quantities of the second date). Then our criterion for a higher real value at the second date is $\Sigma p_2q_2 > \Sigma p_2q_1$, and this implies that $E > L$ (dividing by Σp_1q_1). Our criterion for a higher real value at the first date is $\Sigma p_1q_1 > \Sigma p_1q_2$, i.e., $\frac{1}{\Sigma p_1q_1} < \frac{1}{\Sigma p_1q_2}$ which implies that $E < P$ (multiplying by Σp_2q_2).

Four alternative possibilities now present themselves. (1) E may be greater than either of the two price index-numbers. In this case the first test is satisfied but not the second, so there is clearly a rise in real income. (2) E may be less than either. In this case there is clearly a fall. (3) E may be less than L and greater than P. In this case neither test is satisfied, so that our information is not sufficient to tell us whether real income has risen or fallen. It is true that there will nearly always be some values of E less than L which do actually indicate a rise in real income, and some values of E greater than P which do actually indicate a fall; even though we cannot distinguish these values with the information actually available to us, we shall often be justified in saying that real income has *probably* risen if E is only a little less than L, *probably* fallen if E is only a little greater than P. That is as far as we ought to go.[1]

(4) Finally, E may be greater than L and less than P. If this happens (and the data may sometimes indicate a situation of this sort) we are apparently told that real income has risen and fallen at the same time—which is nonsense. In this case the whole comparison breaks down; something has gone wrong with the assumptions. The most likely explanation will usually be that we are dealing with a situation to which our original hypothesis of constant wants

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[1] Very ingenious efforts have been made by Staehle, Frisch, Wald and others to close the gap further. Since all these methods involve the use of additional assumptions and additional data, they have not been examined here, where our purpose has been to set out the minimum theoretical basis on which National Income calculations must rest. Nevertheless the new methods must be recognised as marking a substantial advance on the earlier ways of calculating "ideal" index-numbers.

It follows at once from what has been said above that the precise point between P and L, which divides those values of E indicating a rise from those indicating a fall in real income, can only be determined further by introducing new information about the indifference systems. It cannot be determined *a priori* by geometric averages or otherwise.

is inapplicable. The data themselves tell us that the hypothesis is intolerable; and so we can get no further.[1]

5. THE PROBLEMS OF VALUATION. SOME MINOR DIFFICULTIES. I have had to make this long excursion into what is usually regarded as the theory of index-numbers because I believe that it is on these propositions that the significance of the Social Income as an index of economic welfare depends. It is only by using these propositions that we can compare real incomes; consequently the only way to settle disputed questions about valuation is to go back to these propositions and enquire what values we ought to put upon the various sorts of goods and services entering into the social income, in order to preserve the validity of the index-number tests. In nearly every case this leads us to a solution.

It will be already apparent that the reason why we use prices as weights, when measuring the social income as an index of economic welfare, is because prices give us some indication of marginal utilities, because the slope of the price-line at a point of equilibrium is the same as that of the indifference curve through that point. The particular prices chosen must always be those which will correspond most closely to relative marginal utilities; this usually means that we must take those prices which actually confront the consumer. We must take retail prices not wholesale prices, prices after tax or subsidy, not before, and so on.

There are, however, certain exceptions. Prices of commodities on the market only correspond to relative marginal utilities if the consumer's choice is free—if he can buy as many units as he likes at the market price. If there is any restriction on the number of units which can be purchased—if, speaking generally, there is anything like a system of rationing of any of the commodities—then the consumer will not be able to proceed down the price-line as far as the point Q which he would have preferred, but must stop somewhere short of it. At the point where he is compelled to stop, the price-line is still intersecting the indifference curves; consequently the slope of the price-line gives us no clue about the slope of the indifference curve through the point reached, and the index-number tests break down.

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[1] If $P > L$ there is a positive correlation between movements of relative prices and movements of quantities acquired, not (as we should expect with constant wants) a negative correlation. But in strict theory the condition $P > L$, though improbable, is not necessarily inconsistent with constant wants, so long as E is greater than P and L, or less than both. It is only the case $P > E > L$ which is excluded.

We can only restore the validity of the index-number tests if we mark up the market prices of the rationed commodities more or less as they would have to be marked up if demand were to be cut down by higher prices to the amount of the ration. Of course, this can only be done by guesswork; the important thing is that rationed commodities ought to be weighted more heavily than they would be if we used their market prices as weights.

The same kind of device can be used in another difficult case, that in which new sorts of goods are introduced in the interval between the two situations we are comparing. If certain goods are available in the II situation which were not available in the I situation, the p_1's corresponding to these goods become indeterminate. The p_2's and q_2's are given by the data, and the q_1's are zero. Nevertheless, although the p_1's cannot be determined from the data, since the goods are not sold in the I situation, it is apparent from the preceding argument what p_1's ought to be introduced in order to make the index-number tests hold. They are those prices which, in the I situation, would *just* make the demands for these commodities (from the whole community) equal to zero. These prices cannot be estimated; but we can observe that between the two situations the demands for these commodities will have increased from zero to certain positive quantities; and hence it is reasonable to suppose that the "prices" of these commodities will usually have fallen relatively to other prices. This principle is sufficient to give us a fairly good way of dealing with the case of new goods.

Since, for the new goods, $q_1=0$, the indeterminate p_1's do not affect the calculation of either E or L. We can still say definitely that real income has risen if $E>L$. It is only the calculation of P, the Paasche index-number, which is affected. But if we are prepared to admit that the "prices" of the new goods must be supposed to have fallen relatively to other prices, it follows that we shall be justified in proceeding to calculate a Paasche index including only those goods which are present in both situations; for we shall know that this index will generally be greater than the true Paasche index, by an amount which depends very largely upon the importance of the new goods in the second situation. Thus E and L are unaffected; P is likely to be slightly overestimated; we can go ahead with the use of our criteria, subject to a slight caution about the lower limit.

6. Public Finance. These principles can also be used to deal with those problems of Public Finance and the inclusion of indirect taxation which were alluded to at the beginning of this paper. In doing so, I shall avoid all questions of detail (about which reference may be made to the *Review of Economic Studies* article); I shall confine myself to the central questions of principle which were not fully cleared up in that place.

A Government raises its revenue by direct and indirect taxes; it spends it in three main ways. One is by paying out incomes which are not in return for current services. Call this Pensions (it includes interest on National Debt). One is by subsidising the production of certain commodities. Lastly, and most important, it spends it on paying for the production of certain Public Services, Defence, Police, Justice and Administration, Education, Health, Roads and so on, which are supplied to the public without specific payment. It is over these Public Services that the difficulties arise.

It is common ground that Pensions should not be double counted. It follows at once from our central principles that subsidised goods should be reckoned at their subsidised prices. But what of the Public Services? Should they be reckoned as subsidised to the extent of 100 per cent. of their cost, and consequently valued at zero, or should they be reckoned in some other way?

It ought to be said, first of all, that since the Public Services do not enter into the market mechanism, there are strong grounds for the view that they are better excluded altogether from National Income calculations. To do this would be perfectly legitimate provided we were prepared to interpret Economic Welfare in a sufficiently narrow sense; provided we only reckoned on our list goods produced for the market and were prepared to accept the assumption of constant wants in terms of those goods. In a fairly *laisser-faire* economy, this might perhaps be a wise solution; we should not be narrowing down the problem very much and we should get a perfectly clear and consistent index of economic welfare, as far as it went. Even when the economic activities of government are extensive, the Social Income of Private Goods does not lose all its significance;

everyone must have felt how peculiar it is to reckon a large production of armaments as a contribution to current economic welfare; the Social Income of Private Goods would be actually superior to that usually calculated as an index of economic welfare in war time.

Defined by the "census of production" method, the Social Income of Private Goods equals the value of the net output of non-public goods and services, valued at their market prices (after tax or subsidy). It is thus equal to Private Consumption *plus* Private Investment. By the aggregation of incomes method, it equals the sum total of private incomes *minus* direct taxation and *minus* government borrowing. (This social income of private goods has the incidental advantage that calculation of the corresponding index-numbers begs fewer questions than is the case with wider definitions.)

If we are not contented with this limited scope, we have to impute a value to the public services. Here I can see no alternative but to assume that the public services are worth, to society in general, at least what they cost; and that this principle holds also at the margin. One may well feel considerable qualms about such an assumption—it is obvious that the government spends far too much on this, far too little on that; but if we accept the actual choices of the individual consumer as reflecting his preferences (clearly we must do so for these purposes), then I do not see that we have any choice but to accept the actual choices of the government, even if they are expressed through a Nero or a Robespierre, as representing the actual wants of society. (To those who cannot stomach this I have indicated a way of escape.) Thus unless we have any reason to suppose that the public services are produced under diminishing costs, we can take their average costs of production as a rough estimate (a lower limit) of their marginal utilities. The public services should thus be valued at cost.

The cost of production of the Public Services (the expenditure on them) equals

> Public Revenue (from Direct Taxation, Indirect Taxation and Loans) *minus* Public Expenditure on Pensions and Subsidies.

In order to get the Social Income including Public Services, we must add this amount to the Social Income of Private

Goods. Consequently the *Social Income including public services* equals

All private incomes + Indirect taxes − Subsidies − Pensions.

Substantially, this is the National Income as calculated by Mr. Colin Clark.

[The argument by which a different result is reached by Professor Bowley has now been made clear in his Manchester paper. He thinks of the public services of the state as being paid for in two different ways. The raising of direct taxes and their expenditure on public services is thought of as a clubbing-together by the public to purchase certain public goods, and the value of these goods is thus taken to equal the money spent on them. Expenditure on public services out of indirect taxation is regarded as subsidisation of these services to the degree of 100 per cent. ; consequently the prices of services paid for out of indirect taxes are taken as zero. This device has a very pleasingly symmetrical effect on the calculation ; for the subsidies are marked up by Professor Bowley's method until they cancel out the indirect taxes ; or rather this symmetrical effect would be achieved if Professor Bowley could bring himself to suppose that the whole of indirect taxation is spent on public services or subsidies and none on Pensions. In practice, he cannot bring himself to this point ; and therefore the actual value of the social income on Professor Bowley's method is not reached (as might at first be supposed) by merely subtracting the total of Pensions from the total of Private Incomes. It is only that part of Pensions which is paid out of direct taxation which must be subtracted ; but who is to say what proportion of Pensions is paid out of direct and what out of indirect taxation ? The Government does not keep two cash-boxes ; nor would it be very significant if it did. The Bowley aggregate, in its latest form, thus contains an element which is wholly arbitrary ; not arbitrary in the sense of being a guess at something we cannot measure, but arbitrary in principle, arbitrary through and through.

I believe that the crucial step which has been responsible for leading Professor Bowley into this awkward position is to be found in his assumption that because a commodity is not charged for, therefore it ought to be valued in the social income at zero. In order for it to be appropriate to value at zero, it is not sufficient that the commodity should not be charged for; it is also necessary for it to be given away freely *in unlimited quantities*; this further condition is necessary for it to be a "free good" in the economic sense. Otherwise its value has to be marked up, as is generally the case with rationed commodities. Now hardly any of the Public Services are such that no additional satisfaction would result from extra expenditure upon them—which is the condition for it to be appropriate to value them at zero. If we had better education services or better health services, or better police (and other things were equal) we should be better off; and the same must be taken as applying to defence, once we have decided to reckon defence as making any direct contribution to economic welfare. Consequently it seems to me that Professor Bowley has been misled by the idea of 100 per cent. subsidisation. There is no reason why we should distinguish between public services paid for out of direct and out of indirect taxation; all public services should be valued on the same principles.

The reason for the "unwarranted inflation of the National Income" (as Professor Bowley calls it) will now be clear. A precisely similar "inflation" ought to be introduced for all rationed commodities, all commodities whose prices do not fully reflect their marginal utilities.]

There is, however, one substantial reason why Mr. Clark's formula must indeed be expected to overestimate the *Social Income including public services*. Some part of the output of public services is not final output, but plays its part in production by facilitating the production of other goods (maintenance of law and order, roads used for business purposes, and so on). To reckon this as well as the goods whose output is facilitated would involve double counting. I do not see how we can hope to do anything about this in practice, for we have no reliable criterion by which to distinguish that part of the output of public services which is not final output from that which is. We must just be prepared to remind ourselves that the Clark formula has not in fact succeeded in eliminating every sort of double counting.

7. THE SOCIAL INCOME AND PRODUCTIVITY. If we value the public services at cost while we value private goods and services at their market prices, we are doing something which is superficially inconsistent, even though

the apparent inconsistency can be justified by regarding the cost valuation as standing for a marginal utility valuation, which is itself incapable of being estimated otherwise. Nevertheless, in spite of this justification, it is undeniably awkward to use different methods of valuation for different parts of the social output; this suggests that we ought not to leave the question without enquiring whether the awkwardness cannot be removed in some other way. One way suggests itself at once: why not value all goods at cost? If we did this we should get an aggregate which would be measured by the original Bowley formula—all private incomes *minus* pensions; for although the public services would be valued as before, private goods would now be valued before tax or subsidy, so that the item "indirect taxes *minus* subsidies" would disappear.

I cannot help suspecting that most people who have worked at this subject retain an obstinate feeling that the original Bowley formula has some real significance—that we are "inflating" it when we add in the taxes. It may be worth while to enquire what that significance can be.

It will by now be clear that the Social Income as an index of Economic Welfare cannot be adequately measured by adding together private incomes and subtracting the pensions which are double counted. The Social Income which is measured in this way must be the Social Income in some other of its functions; and since the formula is reached by valuing at cost, this function is probably to be found on the cost side, not on the utility side.

Let us be for a moment very old-fashioned; let us pretend that we still believe in a Labour Theory of Value, all industries producing under constant costs. Under this hypothesis, it would follow that the various different collections of goods which could be produced from a given quantity of resources in a given state of technique, could be connected by a linear relation—such as that represented on the two-goods diagram by a line PP (Fig. ii). Suppose that in Situation I the quantities of the two goods which could be produced were represented by the line P_1P_1 and the quantities actually produced by the point Q_1. Let P_2P_2 and Q_2 be similar data for the II situation. (The slopes of the lines are relative unit costs of production in the two positions.)

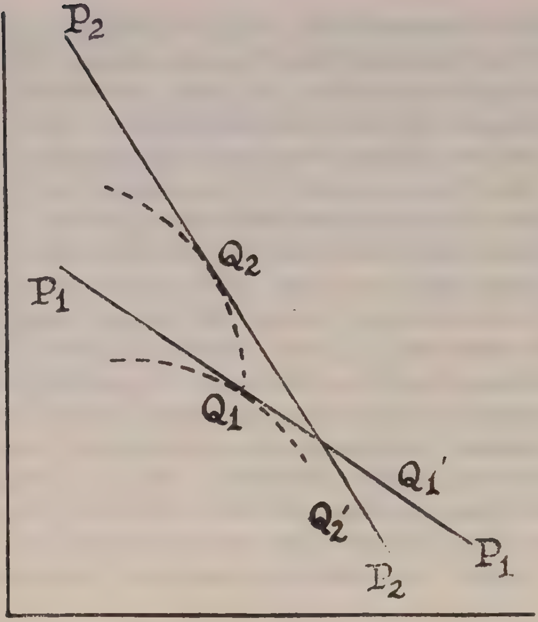

Fig. ii

If Q_2 lies to the right of the line P_1P_1 (in terms of index-numbers $E>P$), this means that the quantities Q_2 are greater than what could have been produced in the I situation from the factors then used; while if Q_1 also lies to the left of P_2P_2 ($E>L$), the quantities Q_1 could have been produced in the II situation, when they would have required a smaller amount of factors than were then used. Thus if E is greater than both of the price-indices,[1] there is an increase in productivity between the two situations; for the goods actually produced in II are more than what could have been produced in I from the resources then employed, and the goods produced in I are less than what could be produced in II under the technical conditions of II. Similarly if E is less than both price-indices, there is a fall in productivity in the same sense.

If E lies between the two price-indices, the change in productivity is of course indeterminate. Once again we have two cases. If $L>E>P$, the two positions are related in the way shown by Q_2 and Q_1' in Fig. ii. Neither position is then attainable in the other situation; Q_2 cannot be reached in I, nor Q_1' in II. If $P>E>L$, each position is attainable in the other situation (compare Q_1 and Q_2'). In neither of these cases can we say that there is a definite rise or fall in productivity. The condition for that to happen is for E to lie above or below both the price-indices.

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[1] The prices now represent unit costs, so they are taken before tax.

This is all very pretty; there can be no doubt that it would be extremely convenient if we could use it with a clear conscience to give us a theory of the social income as an index of production. Of course people do use it in that way; it is on this sort of structure that actual index-numbers of production are based; but it has to be recognised that it is extremely shaky from a theoretical point of view. Returns are not always constant; prices (ex tax) are not always equal to marginal cost; once these assumptions are dropped the whole argument loses its validity.

The argument begins to break down as soon as we take the first step on the road towards modern theories of the relation between value and cost. It is not necessarily valid even in a world of perfect competition and universal diminishing returns. For in such a world the substitution curves have already ceased to be straight lines; they are curves concave to the axes (the dotted curves in Fig. ii represent substitution curves on which Q_1 and Q_2 are chosen positions). Now if $E > P$, this does indeed tell us that Q_2 cannot be reached in the I situation (since the substitution curve through Q_1 lies wholly to the left of P_1P_1); however, $E > L$ does not tell us that Q_1 can be reached in the II situation, for it only informs us that Q_1 lies to the left of P_2P_2 and that is consistent with Q_1 being either to the right or to the left of the II substitution curve.[1] Thus even if E is greater than both the price-indices, we cannot be certain that there has been a *definite* increase in productivity.

The collapse is much worse when we allow for increasing returns and imperfect competition. Prices (before taxation) cease to represent marginal costs; we have no reliable information about the convexity or concavity of the substitution curves. Some people may be tempted to rush in with the suggestion that a constant degree of market imperfection and constant marginal costs would mend the situation, and is not too bad a hypothesis; but there seem to be crushing objections against this. While there may be some sense in which it is normal for marginal costs to be constant under imperfect competition, that sense can hardly be relevant here, where we are thinking about a whole economy, not a single firm, so that the specificity of factors is of first-rate importance to us. Further, unless we have some way of measuring marginal costs directly, we need to assume not only a constant degree of market imperfection, but the same degree of market imperfection in all industries—and that assumption is hardly tolerable. It does not seem as if the collapse can be prevented.

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[1] The reason why we get a determinate result from similar analysis applied to economic welfare and do not get a determinate result here, is because the assumption of *constant wants* carries with it the assumption that the various indifference curves belong to the same system, so that they cannot intersect. The two production substitution curves do not belong to the same system.

8. PRODUCTIVITY AND ECONOMIC WELFARE. The idea that the Social Income as a measure of productivity may be something different from the Social Income as a measure of Economic Welfare comes as rather a shock; at least I must admit that it gave me a shock when I began to realise it. For the identity of these two things is really implied in so much of our thinking; several familiar uses of National Income calculations, and several of the difficulties raised by those calculations proceed from our failure to distinguish. How did we come to embrace this delusion?

It is fairly easy to see how it was when we reflect on the conditions which are necessary in order to make the two measures coincide. If competition were perfect, and if state activities were so designed as not to disturb the *optimum* organisation of production,[1] marginal utilities and prices and marginal costs would all be proportional, so that the same valuation which gave us the social income as a measure of economic welfare would also give us the social income as a measure of productivity. (It would not be very reliable as a measure of productivity, but it might usually satisfy the productivity tests for small displacements, over which the substitution curves might not differ very much from straight lines.) It is the departure of the system from the optimum, whether as a result of indirect taxation or as a result of imperfect competition, which upsets the equivalence and makes the measurement of economic welfare a different thing from the measurement of productivity. Delusions which arise from the habit of treating the organisation of an economy as optimum when it is not optimum form a fairly familiar type; it would seem that this is one of them.

The measurement of economic welfare and the measurement of productivity are in fact quite different things;

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[1] Cf. my article, "The Foundations of Welfare Economics" (*Economic Journal*, December, 1939, p. 701).

their coincidence under optimum conditions is a special property of that particular state of affairs. In practice, nearly every doubtful point about the Social Income is clarified by separating out these two distinct aspects. In the sphere of international economic relations, the National Income and the National Product are already well contrasted. The same kind of contrast needs to be carried into the field of capital maintenance and accumulation, where it is exceedingly helpful.

Irving Fisher's definition of the Social Income (to exclude investment) is far more plausible as a measure of current Economic Welfare alone, than it seemed to be when we expected a measure of Economic Welfare to be a measure of productivity as well. It is only consumption which contributes directly to current welfare—the contribution made by saving is at least of doubtful comparability. However, if we do decide to include saving in our Welfare index, the appropriate concept of individual income can be nothing else but what the individual *thinks* he can consume without making himself worse off.[1] This is purely subjective, incapable of objective measurement; so that in order to get a statistical measurement of this sort of income we can only proceed by taking some conventional rule about what the individual *ought* to reckon as his income. Probably it is worth while to do this; but we should be clear what we are doing.

When it comes to the measurement of productivity (so far as we can measure it), consumption and investment goods are all on a par; there is no significant difference between them from this point of view. If we are content to measure *gross* productivity, the problems of capital maintenance and accumulation simply do not arise; even if we desire a measure of *net* productivity (deducting wear and tear) it would seem that the right method theoretically is to regard the using-up of equipment as negative production, to be weighted by the cost of replacement. I do not suppose that much can be done on these lines, but merely state what seems to be the most defensible procedure.

9. OTHER APPLICATIONS. The distinction between welfare and productivity measurements seems to be the most important line of division between different valuations of the Social Income. If we want to compare economic welfare

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[1] Cf. my *Value and Capital*, ch. XIV.

over time, we must weight by those prices which best represent marginal utilities; this gives us the Clark formula, subject to the above qualifications. If we want to compare productivity over time, we must weight by those prices which best represent marginal costs; for this purpose the original Bowley formula (declared incomes *minus* pensions) may be the best that can be provided. For other applications of National Income work, one or other of these formulæ is generally more or less appropriate.

For example, let us consider the distribution question—the question of determining what income could be secured by each family if all income were divided equally. This was the problem which chiefly interested Professor Bowley in his earlier calculations of the National Income; for this purpose the formula he used seems as appropriate as any. The question is one which belongs to the productivity, rather than to the welfare, side. We are assuming given productive resources and asking how far they would go if their product was divided equally. Professor Bowley's calculations[1] give the answer to this question on the assumption of constant supply price in all industries. In practical application, it needs to be adjusted by allowance for loss of productivity on transferring specific factors (diminishing returns) and for the economies of large scale (increasing returns).

Exactly the same thing applies to the use of National Income calculations for the study of war potential. This is again a productivity problem, and here again the crude arithmetic, in which it is so easy to indulge, conceals the assumption of constant supply price. In the short period, marginal costs are more likely to be increasing than diminishing, so that we may be fairly sure that £1 spent by the government generally takes away less than £1's worth of resources from civilian uses.[2] This is not to deny the usefulness of the statistical arithmetic, nor to deny the seriousness of the situation it discloses; I am only concerned here, as elsewhere in this paper, to put in a plea for theoretical analysis as a ground for maintaining some caution in the application of such statistical results.

[1] Bowley, *Division of the Product of Industry*; Bowley and Stamp, *The National Income.*

[2] The more weight one gives to this consideration the more weight one must also give to the question of profiteering (including wage-profiteering).

Socialist Calculation: The Competitive 'Solution'[1]

By F. A. v. Hayek

I

Two chapters in the discussion of the economics of socialism may now be regarded as closed. The first deals with the belief that socialism will dispense entirely with calculation in terms of value and will replace it with some sort of calculation *in natura* based on units of energy or of some other physical magnitude. Although this view is not yet extinct and is still held by some scientists and engineers, it has been definitely abandoned by economists. The second closed chapter deals with the proposal that values, instead of being left to be determined by competition, should be found by a process of calculations carried out by the planning authority which would use the technique of mathematical economics. With regard to this suggestion, V. Pareto (who, curiously enough, is sometimes quoted as holding this view) has already said what probably will remain the final word. After showing how a system of simultaneous equations can be used to explain what determines prices on a market he adds:

> " It may be mentioned here that this determination has by no means the purpose to arrive at a numerical calculation of prices. Let us make the most favourable assumption for such a calculation, let us assume that we have triumphed over all the difficulties of finding the data of the problem and that we know the *ophélimités* of all the different commodities for each individual, and all the conditions of production of all the commodities, etc. This is already an absurd hypothesis to make. Yet it is not sufficient to make the solution of the problem

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[1] The two recent books with which this article is mainly concerned, Oskar Lange and Fred M. Taylor, *On the Economic Theory of Socialism*, edited by B. E. Lippincott, Minneapolis, 1938, and H. D. Dickinson, *Economics of Socialism*, Oxford, 1939, will be referred to throughout this article as LT (Lange-Taylor) and D (Dickinson) respectively.

> possible. We have seen that in the case of 100 persons and 700 commodities there will be 70,699 conditions (actually a great number of circumstances which we have so far neglected will still increase that number); we shall therefore have to solve a system of 70,699 equations. This exceeds practically the power of algebraic analysis, and this is even more true if one contemplates the fabulous number of equations which one obtains for a population of forty millions and several thousand commodities. In this case the rôles would be changed: it would not be mathematics which would assist political economy, but political economy would assist mathematics. In other words, if one really could know all these equations, the only means to solve them which is available to human powers is to observe the practical solution given by the market."[1]

In the present article we shall be mainly concerned with a third stage in this discussion, for which the issue has now been clearly defined by the elaboration of proposals for a competitive socialism by Professor Lange and Dr. Dickinson. Since, however, the significance of the result of the past discussions is not infrequently represented in a way which comes very near to an inversion of the truth, and as at least one of the two books to be discussed is not quite free from this tendency, a few further remarks on the real significance of the past development seem not unnecessary.

The first point is connected with the nature of the original criticism directed against the more primitive conceptions of the working of a socialist economy which were current up to about 1920. The idea then current (and still advocated, e.g. by Dr. O. Neurath) is well expressed by F. Engels in his *Anti-Dühring*, when he says that the social plan of production " will be settled very simply, without the intervention of the famous ' value '." It was against this generally held belief that N. G. Pierson, L. v. Mises, and others pointed out that if the socialist community wanted to act rationally its calculation would have to be guided by the same *formal* laws which applied to a capitalist society. It seems necessary especially to underline the fact that this was a point made by the critics of the socialist plans, since Professor Lange and particularly his editor[2] now seem inclined to suggest that the demonstration that the formal principles of economic theory apply to a socialist economy provides an answer to these critics. The fact is that it has never been denied by anybody, except socialists, that these formal principles *ought* to apply to a socialist society, and the question raised by Professor Mises and others was not whether they ought to apply but whether they could in practice be applied in the absence of a market. It is therefore entirely beside the point when Professor Lange and others quote Pareto and Barone as having shown that values in a socialist society would depend on essentially the same factors as in a competitive society. This of course had been shown long before, particularly by Wieser. But none of these authors has made an attempt to show how these values, which a socialist society ought to use if it wanted to act rationally, could be found, and Pareto, as we have seen, expressly denied that they could be determined by calculation.

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[1] V. Pareto, *Manuel d'économie politique*, 2nd ed., 1927, pp. 233/4.

[2] See B. E. Lippincott in LT, p. 7.

It seems then that, on this point, the criticisms of the earlier socialist schemes have been so successful that the defenders, with few exceptions,[1] have felt compelled to appropriate the argument of their critics, and have been forced to construct entirely new schemes of which nobody thought before. While against the older ideas that it was possible to plan rationally without calculation in terms of value it could be justly argued that they were logically impossible, the newer proposals designed to determine values by some process other than competition based on private property raise a problem of a different sort. But it is surely unfair to say, as Professor Lange does, that the critics, because they deal in a new way with the new schemes evolved to meet the original criticism, " have given up the essential point " and " retreated to a second line of defence " (LT 63). Is this not rather a case of covering up the own retreat by creating confusion about the issue ?

There is a second point on which Professor Lange's presentation of the present state of the debate is seriously misleading. The reader of his study can hardly avoid the impression that the idea that values should and could be determined by using the technique of mathematical economics, i.e. by solving millions of equations, is a malicious invention of the critics, intended to throw ridicule on the efforts of modern socialist writers. The fact, which cannot be unknown to Professor Lange, is of course that this procedure has more than once been seriously suggested by socialist writers as a solution of the difficulty—among others by Dr. Dickinson, who now, however, expressly withdraws this earlier suggestion.[1]

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[1] The most notable exception is Dr. M. Dobb. See his *Political Economy and Capitalism*, 1937, chapter VIII, and his review of Professor Lange's book in the *Modern Quarterly*, 1939.

II

A third stage in the debate has now been reached with the proposal to solve the problems of determining values by the re-introduction of competition. When five years ago the present author tried to appraise the significance of these attempts[2] it was necessary to rely on what could be gathered from oral discussion among socialist economists, since no systematic exposition of the theoretical bases of competitive socialism was then available. This gap has now been filled by the two books here to be discussed. The first contains a reprint of an essay by Professor Lange, originally published in 1936 and 1937, together with an older article by the late Professor Taylor (dating from 1928) and an introduction by the editor, Professor B. E. Lippincott, which in addition to a quite unnecessary restatement of Professor Lange's argument in cruder terms, does much by the unmeasured praise he bestows on this argument and the extravagant claims he advances for it,[3] to prejudice the reader against the essentially scholarly piece of work that follows. Although written in a lively style and confining itself to the outlines of the subject, it does seriously grapple with some of the main difficulties in the field.

Dr. H. D. Dickinson's more recent book is a far more comprehensive survey of the field, proposing essentially the same solution.[4] It is unquestionably a book of great distinction, well organised, lucid and concise, and should rapidly establish itself as the standard work on its subject. To the economist, the reading of the book provides indeed the rare pleasure of feeling that recent advances of economic theory have not been in vain and have even helped to reduce political differences to points which can be rationally discussed. Dr. Dickinson himself would probably agree that he shares all his economics with—and indeed has learnt most of it from—non-socialist economists, and that in his essential conclusions on the desirable economic policy of a socialist community he differs much more from most of his socialist colleagues than from " orthodox " economists. This, together with the open-mindedness with which the author takes up and considers the arguments advanced by his opponents, makes discussion of his views a real pleasure. If the socialists, like the economists, are ready to accept his book, as the most up-to-date general treatment of the economics of socialism from the socialist point of view, it should provide the basis for much fruitful further discussion.

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[1] D, p. 104, and K. Tisch, *Wirtschaftsrechnung und Verteilung im zentralistisch organisierten sozialistischen Gemeinwesen*, 1932.

[2] In *Collectivist Economic Planning*, London, 1935, essay on "The Present State of the Debate."

[3] Dr. Lange's essay is described as the "first writing to mark an advance on Barone's contribution" and to show by "irrefutable" argument the "evident feasibility and superiority" of a socialist system (LT, pp. 13, 24, 37).

[4] It is a curious fact that Dr. Dickinson nowhere in his book (except in the bibliography) refers to Professor Lange's work.

As has already been mentioned, the main outlines of the solution offered by the two authors are essentially the same. They both rely to some extent on the competitive mechanism for the determination of relative prices. But they both refuse to let prices be determined directly in the market and propose instead a system of price-fixing by a central authority, where the state of the market of a particular commodity, i.e. the relation of demand to supply, merely serves as an indication to the authority whether the prescribed prices ought to be raised or lowered. Neither of the two authors explains why he refuses to go the whole hog and to restore the price mechanism in full. But as I happen to agree (although probably for different reasons) that this would be impracticable in a socialist community, we can leave this question aside for the moment and shall take it for granted that in such a society competition cannot play quite the same rôle as it does in a society based on private property, and that, in particular, the rates at which commodities will be exchanged by the parties in the market will have to be decreed by the authority.

We shall leave the details of the proposed organisation for later consideration and first consider the general significance of this solution under three aspects. We shall ask firstly how far this kind of socialist system still conforms to the hopes that were placed on the substitution of a planned socialist system for the chaos of competition; secondly, how far the proposed procedure is an answer to the main difficulty, and, finally, how far it is applicable.

The first and most general point can be dealt with fairly briefly, although it is not unimportant if one wants to see these new proposals in their proper light. It is merely a reminder of how much of the original claim for the superiority of planning over competition is abandoned if the planned society is now to rely for the direction of its industries to a large extent on competition. Until quite recently, at least, planning and competition used to be regarded as opposites, and this is unquestionably still true of nearly all planners except a few economists among them. I fear that the schemes of Professor Lange and Dr. Dickinson will bitterly disappoint all those scientific planners who, in the recent words of Professor B. M. S. Blackett, believe that " the object of planning is largely to overcome the results of competition ".[1] This would be even more true if it were really possible to reduce the arbitrary elements in a competitive socialist system as much as is believed by Dr. Dickinson, who hopes that his " libertarian socialism " " may establish, for the first time in human history, an effective individualism " (D 26). Unfortunately, as we shall see, this is not likely to be the case.

III

The second general question we must consider is how far the proposed method of centralised price fixing, while leaving it to individual firms and consumers to adjust demand and supply to the given prices, is likely to solve the problem which admittedly cannot be solved by mathematical calculation. Here, I am afraid, I find it exceedingly difficult to understand the grounds on which such a claim is made. Professor Lange (LT 70, 86) as well as Dr. Dickinson (D 103 and 113) assert that even if the initial system of prices were chosen entirely at random, it would be possible by such a process of trial and error gradually to approach to the appropriate system. This seems to be much the same thing as if it were suggested that a system of equations which was too complex to be solved by calculation within reasonable time and whose values were constantly changing could be effectively tackled by arbitrarily inserting tentative values and then trying about till the proper solution was found. Or, to change the metaphor, the difference between such a system of regimented prices and a system of prices determined by the market seems to be about the same as that between an attacking army where every unit and every man could only move by special command and by the exact distance ordered by headquarters and an army where every unit and every man can take advantage of every opportunity offered to them. There is of course no *logical impossibility* of conceiving a directing organ of the collective economy which is not only "omnipresent and omniscient" as Dr. Dickinson conceives it (D 191), but also omnipotent and which therefore would be in a position to change without delay every price by just the amount that is required. When, however, one proceeds to consider the actual apparatus by which this sort of adjustment is to be brought about one begins to wonder whether anyone should really be prepared to suggest that, within the domain of practical possibility, such a system will ever even distantly approach the efficiency of a system where the required changes are brought about by the spontaneous action of the persons immediately concerned.

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[1] See Sir Daniel Hall and others, *The Frustration of Science*, London, 1935, p. 142.

We shall later, when we consider the proposed institutional setting, come back to the question how this sort of mechanism is likely to function in practice. In so far as the general question is concerned, however, it is difficult to suppress the suspicion that this particular proposal has been born out of an excessive pre-occupation with problems of the pure theory of stationary equilibrium. If in the real world we had to deal with approximately constant data, that is, if the problem were, to find a price system which then could be left more or less unchanged for long periods, then the proposal under consideration would not be so entirely unreasonable. With given and constant data such a state of equilibrium could indeed be approached by the method of trial and error. But this is far from being the situation in the real world, where constant change is the rule. Whether and how far anything approaching the desirable equilibrium is ever reached depends entirely on the speed with which the adjustments can be made. The practical problem is not whether a particular method would eventually lead to a hypothetical equilibrium, but which method will secure the more rapid and complete adjustment to the daily changing conditions in different places and different industries. How great the difference in this respect would be between a method where prices are currently agreed upon by the parties of the market and a method where these prices are decreed from above is of course a matter of practical judgment. But I find it difficult to believe that anybody should doubt that in this respect the inferiority of the second method would be very great indeed.

The third general point is also one where I believe that preoccupation with concepts of pure economic theory has seriously misled both our authors. In this case it is the concept of perfect competition which apparently has made them overlook a very important field to which their method appears to be simply inapplicable. Wherever we have a market for a fairly standardised commodity it is at least conceivable that all prices should be decreed in advance from above for a certain period. The situation is however very different with respect to commodities which cannot be standardised, and particularly for those which to-day are produced on individual orders, perhaps after invitation for tenders. A large part of the product of the "heavy industries", which of course would be the first to be socialised, belongs to this category. Much machinery, most buildings and ships and many parts of other products are hardly ever produced for a market, but only on special contract. This does not mean that there may not be intense competition in the market for the products of these industries, although it may not be "perfect competition" in the sense of pure theory; the fact is simply that identical products are rarely produced twice in short intervals; and the circle of producers who will compete as alternative suppliers in each instance will be different in almost every individual case, just as the circle of potential customers who will compete for the services of a particular plant will differ from week to week. What basis is there in all these cases for fixing prices of the product so as "to equalise demand and supply"? If prices are here to be fixed by the central authority, they will have to be fixed in every individual case and on the basis of an examination by that authority of the calculations of all potential suppliers and all potential purchasers. It is hardly necessary to point out the various complications that will arise according as the prices are fixed before or after the prospective buyer has decided on the particular piece of machinery or building which he wants. Presumably it will be the estimates of the producer which, before they are submitted to the prospective customer, will have to be approved by the authority. Is it not clear that in all these cases, unless the authority in effect takes all the functions of the entrepreneur on itself (i.e. unless the proposed system is abandoned and one of complete central direction substituted), the process of price fixing would either become exceedingly cumbersome and the cause of infinite delay, or a pure formality ?

IV

All these considerations appear to be relevant whatever particular form of organisation is chosen. Before we go further, however, it becomes necessary to consider somewhat more in detail the concrete apparatus of industrial control which the two authors propose. The sketches they provide of the organisation are fairly similar, although in this respect Professor Lange gives us somewhat more information than Dr. Dickinson, who, for most of the problems of economic organisation, refers us to the works of Mr. and Mrs. Webb and Mr. G. D. H. Cole (D 30).

Both authors contemplate a socialist system in which the choice of occupation would be free and regulated mainly by the price mechanism (i.e. by the wage system) and in which the consumers also would be free to spend their incomes as they chose. Apparently both authors also want prices of consumers' goods to be fixed by the ordinary market processes (although Dr. Dickinson does not seem to be quite decided on this point) (LT 78, D 60), and also to leave the determination of wages to the bargaining between the parties concerned (LT 78, D 126). Both also agree that for various reasons not the whole of industry should be socialised, but that, besides the socialised there should also remain a private sector, consisting of small enterprises run on essentially capitalistic lines. I find it difficult to agree with their belief that the existence of such a private sector parallel with the socialised sector creates no special difficulties. But as it would be difficult within the space of this article to deal adequately with this problem, we shall, for the purposes of this discussion, disregard the existence of the private sector and assume that the whole of industry is socialised.

The determination of all prices, other than those of consumers' goods and of wages, is the main task of the central economic authority, Professor Lange's Central Planning Board or Dr. Dickinson's Supreme Economic Council. (We shall, following Dr. Dickinson, henceforth refer to this body as the S.E.C.) As regards the technique of how particular prices are announced and changed we get more information, although by no means enough, from Professor Lange, while Dr. Dickinson goes more fully into the question by what considerations the S.E.C. should be guided in the fixing of prices. Both questions have a special importance and they must be considered separately.

According to Professor Lange, the S.E.C. would from time to time issue what, following Professor Taylor, he calls " factor valuation tables ", that is, comprehensive lists of prices of all means of production (except labour) (LT 46, 52). These prices would have to serve as the sole basis for all transactions between different enterprises and the whole calculation of all the industries and plants during the period of their validity and the managers must treat these prices as constant (LT 81). What we are not told, however, either by Professor Lange or by Dr. Dickinson, is for what period these prices are to be fixed. This is one of the more serious obscurities in the exposition of both authors, a gap in their exposition which makes one almost doubt whether they have made a real effort to visualise their system at work. Are prices to be fixed for a definite period in advance, or are they to be changed whenever it seems desirable? F.M. Taylor seemed to suggest the former alternative when he wrote that the appropriateness of particular prices would show itself at the end of the " productive period " (LT 53); and Professor Lange, on at least one occasion, gives the same impression when he says that " any price different from the equilibrium price would show at the end of the accounting period a surplus or shortage of the commodity in question " (LT 82). But on another occasion he says that " adjustments of those prices would be constantly made " (LT 86), while Dr. Dickinson confines himself to stating that after, " by a process of successive approximation," " a set of prices can ultimately be established in consonance with the principles of scarcity and substitution," " small adjustments will be sufficient to keep the system in equilibrium except in the case of major technical innovations or of big changes in consumers' tastes" (D 100, 102, 103). Could the failure to understand the true function of the price mechanism, caused by the modern preoccupation with stationary equilibrium, be better illustrated?

While Dr. Dickinson is very uninformative on the mechanism of bringing price changes into effect, he goes much more fully than Professor Lange into the considerations on which the S.E.C. would have to base their decisions. Unlike Professor Lange, Dr. Dickinson is not satisfied with the S.E.C. merely watching the market and adjusting prices when an excess of demand or supply appears, and then trying to find by experimentation a new equilibrium level. He rather wants the S.E.C. to use statistically established demand and supply schedules as a guide to determine the equilibrium prices. This is evidently a residue of his earlier belief in the possibility of solving the whole problem by the method of simultaneous equations. But although he has now abandoned this idea (not because he regards it as impossible, since he still believes it could be done by solving merely "two or three thousand simultaneous equations" (D 104), but because he realises that "the data themselves, which would have to be fed into the equation-machine, are continually changing"), he still believes that the statistical determination of demand schedules would be useful as an aid to, if not as a substitute for, the method of trial and error, and that it would be well worth while to try and establish the numerical values of the constants (*sic*) in the Walrasian system of equilibrium.

V

Whatever the method by which the S.E.C. fixes prices, and particularly whatever the periods at which and for which prices are announced, there are two points about which there can be little question: the changes will occur later than they would if prices were determined by the market parties, and there will be less differentiation between prices of commodities according to differences of quality and the circumstances of time and place. While with real competition price changes occur when the parties immediately concerned know that conditions have changed, the S.E.C. will be able to act only after the parties have reported, the reports have been verified, contradictions cleared up, etc.; and the new prices will become effective only after all the parties concerned have been notified, that is, either a date will have to be fixed in advance at which the new prices will become effective, or the accounting will have to include an elaborate system by which every manager of production is constantly notified of the new prices upon which he has to base his calculations. Since in fact every manager would have to be informed constantly on many more prices than those of the commodities which he is actually using (at least of those of all possible substitutes), some sort of periodic publication of complete lists of all prices would be necessary. It is clear that while economic efficiency demands that prices should be changed as promptly as possible, practicability would confine actual changes to intervals of fair length.

That the price fixing process will be confined to establishing uniform prices for classes of goods and that therefore distinctions based on the special circumstances of time, place and quality will find no expression in prices is probably obvious. Without some such simplification the number of different commodities for which separate prices would have to be fixed would be practically infinite. This means, however, that the managers of production will have no inducement and even no real possibility to make use of special opportunities, special bargains and all the little advantages offered by their special local conditions, since all these things could not enter into their calculations. It would also mean, to give only one other instance of the consequences, that it would never be practicable to incur extra costs to remedy a sudden scarcity quickly, since a local or temporary scarcity could not affect prices until the official machinery had acted.

For both these reasons, because prices would have to be fixed for periods and because they would have to be fixed generically for categories of goods, a great many prices would be at most times in such a system substantially different from what they would be in a free system. This is very important for the functioning of the system. Professor Lange makes great play with the fact that prices act merely as " indices of terms on which alternatives are offered " (LT 78) and that this " parametric function of prices " (LT 70, 86) by which prices are guiding the action of individual managers without being directly determined by them, will be fully preserved under such a system where prices are fixed. As he himself points out, " the determinateness of the accounting prices holds, however, only if all discrepancies between demand and supply of a commodity are met by an appropriate change of price ", and for this reason " rationing has to be excluded " and " the rule to produce at the minimum average cost has no significance unless prices represent the relative scarcity of the factors of production " (LT 93/4). In other words, prices will provide a basis for rational accounting only if they are such that at the ruling prices anyone can always sell as much or buy as much as he wishes, or that anyone should be free to buy as cheaply or to sell as dearly as is made possible by the existence of a willing partner. If I cannot buy more of a factor so long as it is worth more to me than the price, and if I cannot sell a thing as soon as it is worth less to me than the price which somebody else would be willing to pay for it, prices are no longer indices of alternative opportunities.

We shall see the significance of this more clearly when we consider the action of the managers of the socialist industries. But before we can consider their action we must see who these people are and with what functions they are invested.

VI

The nature of the industrial unit under separate management and the factors which determine its size and the selection of its management is another point on which both our authors are deplorably vague. Professor Lange seems to contemplate the organisation of the different industries in the form of national trusts, although this important point is only just touched upon once when the National Coal Trust is mentioned as an example (LT 78). The very important and relevant question of what is *one* industry is nowhere discussed, but he apparently assumes that the various " managers of production " will have monopolistic control of the particular commodities with which they are concerned. In general Professor Lange uses the term " managers of production " exceedingly vaguely (LT 75, 79, 86), leaving it obscure whether the directors of a whole " industry " or of a single unit are meant ; but at critical points (LT 76, 82 note) a distinction between the managers of plant and the managers of a whole industry appears without any clear limitation of their function. Dr. Dickinson is even more vague when he speaks of economic activities being " decentralised and carried on by a large number of separate organs of collective economy " which will have " their own nominal capital and their own profit and loss account and will be managed very much as separate enterprises under capitalism " (D 213).

Whoever these managers of production are, their main function would appear to be to decide how much and how to produce on the basis of the prices fixed by the S.E.C. (and the prices of consumers' goods and the wages determined by the market). They would be instructed by the S.E.C. to produce at the lowest possible average costs (LT 75) and to expand production of the individual plants till marginal costs are equal to price (LT 76, D 107). According to Professor Lange the directors of the industries (as distinguished from the managers of individual plants) would have also the further task of seeing that the amount of equipment in the industry as a whole is so adjusted that " the marginal cost incurred by the industry " in producing an output which " can be sold or ' accounted for ' at a price which equals marginal cost " is the lowest possible (LT 77).

In this connection a special problem arises which unfortunately cannot be discussed here as it raises questions of such difficulty and complexity that a separate article would be required. It concerns the case of decreasing marginal costs where, according to both our authors, the socialist industries would act differently from capitalist industry by expanding production till prices are equal, not to average, but to marginal costs. Although the argument employed possesses a certain specious plausibility it can hardly be said even that the problem is adequately stated in either of the two books, still less that the conclusions drawn are convincing. Within the space available on this occasion however we can do no more than seriously question Dr. Dickinson's assertion that " under modern technical conditions, diminishing costs are far commoner than increasing costs "—a statement which in the context in which it occurs clearly refers to marginal costs (D 108).

Here we shall confine ourselves to considering one question arising out of this part of the proposal, the question how the S.E.C. will ensure that the principle that prices are equalised to the lowest marginal cost at which the quantity concerned can be produced, is actually put into force. The question which arises here is not " merely " one of the loyalty or capacity of the socialist managers. For the purpose of this argument it may be granted that they will be as capable and as anxious to produce as cheaply as the average capitalist entrepreneur. The problem arises because one of the most important forces which in a truly competitive economy brings about the reduction of costs to the minimum discoverable will be absent, namely, price competition. In the discussion of this sort of problem, as in the discussion of so much of economic theory at the present time, the question is frequently treated as if the cost curves were objectively given facts. What is forgotten here is that the method which under given condition is the cheapest is a thing which has to be discovered, and to be discovered anew sometimes almost from day to day, by the entrepreneur, and that, in spite of the strong inducement, it is by no means regularly the established entrepreneur, the man in charge of the existing plant, who will discover what is the best method. The force which in a competitive society brings about the reduction of price to the lowest cost at which the quantity saleable at that cost can be produced is the opportunity for anybody who knows a cheaper method to come in at his own risk and to attract customers by underbidding the other producers. But if prices are fixed by the authority this method is excluded. Any improvement, any adjustment of the technique of production to changed conditions will be dependent on convincing the S.E.C. that the commodity in question can be produced cheaper and that therefore the price ought to be lowered. Since the man with the new idea will have no possibility of establishing himself by undercutting, the new idea cannot be proved by experiment till he has convinced the S.E.C. that his way of producing the thing is cheaper. Or, in other words, every calculation by an outsider who believes that he can do better will have to be examined and approved by the authority, which in this connection will have to take over all the functions of the entrepreneur.

VII

Let us briefly consider a few of the problems arising out of the relations between the " socialist managers of production " (whether of a plant or an industry) and the S.E.C. The manager's task is, as we have seen, to order production in such a way that his marginal costs are as low as possible and equal to price. How is he to do this and how is the fact of his success to be verified? He has to take prices as given. This turns him into what has recently been called a pure "quantity adjuster", i.e. his decision is confined to the quantities of factors of production and the combination in which he uses them. But as he has no means of inducing his suppliers to offer more, or to induce his purchasers to buy more, than they want to at the prescribed price, he will frequently be simply unable to carry out his instructions; or at least, if he cannot get more of a material required at the prescribed price, the only way for him, e.g., to expand production so as to make his cost equal to price, would be to use inferior substitutes or to employ other uneconomic methods; and when he cannot sell at the prescribed price and until the price is lowered by decree, he will have to stop production where under true competition he would have lowered his prices.

Another great difficulty arising out of the periodic price changes by decree is the problem of anticipations of future price movements. Professor Lange, somewhat too bravely, cuts this Gordian knot by prescribing that "for purposes of accounting, prices must be treated as constant, as they are treated by entrepreneurs on a competitive market" (!). Does that mean that the managers, although they know for certain that a particular price will have to be raised or lowered, must act as if they did not know? Clearly this won't do. But if they are free to meet expected price movements by anticipatory action, are they to be allowed to take advantage of the administrative delays in making price changes effective? And who is to be responsible for losses caused by wrongly timed or wrongly directed price changes?

Closely connected with this problem is another one, to which we also get no answer. Both our authors speak about "marginal costs" as if they were independent of the period for which the manager can plan. Clearly actual costs depend in many instances as much as on anything on buying at the right time. And in no sense can costs during any period be said to depend solely on prices during that period. They depend as much on whether these prices have been correctly foreseen as on the views that are held about future prices. Even in the very short run costs will depend on the effects which current decisions will have on future productivity. Whether it is economical to run a machine hard or to economise in lubricants, whether to make major adjustments to a given change in demand or to carry on as well as possible with the existing organisation, in fact almost every decision on how to produce now depends at least in part on the views held about the future. But while the manager clearly must hold some views on these questions, he can hardly be held responsible for anticipating future changes correctly if these changes depend entirely on the decision of the authority.

Not only, however, will the success of the individual manager depend to a large extent on the action of the planning authority. He will also have to satisfy the same authority that he has done as well as was possible. Either beforehand, or more likely retrospectively, all his calculations will have to be examined and approved by the authority. This will not be a perfunctory auditing directed to find out whether his costs have actually been what he says they have been. It will have to establish whether they have been the lowest possible ones. This means that the control will have to consider not only what he actually did but also what he might have done and ought to have done. And from the point of view of the manager it will be much more important that he should always be able to prove that in the light of the knowledge which he possessed the decision actually taken was the right one than that he should prove to be right in the end. If this must not lead to the worst forms of bureaucracy I do not know what would.

This brings us to the general question of the responsibility of the managers. Dr. Dickinson clearly sees that " responsibility means in practice financial responsibility " and that unless the manager " bears responsibility for losses as well as for profits he will be tempted to embark upon all sorts of risky experiments on the bare chance that one of them will turn out successful " (D 214). This is a difficult problem with managers who have no property of their own. Dr. Dickinson hopes to solve it by a system of bonuses. This may indeed be sufficient to prevent managers from taking too great risks. But is not the real problem the opposite one, that managers will be afraid of taking risks if, when the venture does not come off, it will be somebody else who will afterwards decide whether they have been justified in embarking on it ? As Dr. Dickinson himself points out, the principle would be that "although the making of profits is not necessarily a sign of success, the making of losses is a sign of failure" (D 219). Need one say more about the effects of such a system on all activities involving risk? It is difficult to conceive that under these circumstances any of the necessary speculative activities involving risk-bearing could be left to managerial initiative. But the alternative is to fall back for them on that system of strict central planning to avoid which the whole system has been evolved.

VIII

All this is even more true when we turn to the whole problem of new investments, that is, to all the questions which involve changes in the size (i.e. the capital) of the managerial units, whether they involve net changes in the total supply of capital or not. Up to a point it is possible to divide this problem into two parts, the decisions about the distribution of the available capital supply and the decisions about the rate at which capital is to be accumulated, although it is dangerous to carry this division too far, since the decision about how much is to be saved is necessarily also a decision about which needs for capital are to be satisfied and which are not. Both our authors agree that, as regards the problem of the distribution of capital between industries and plants, the interest mechanism should as far as possible be retained, but that the decision of how much to save and invest would necessarily have to be arbitrary (LT 85, D 80, 205).

Now however strong the desire may be to rely on the interest mechanism for the distribution of capital, it is fairly obvious that the market for capital can in no sense be a free market. And while for Professor Lange the rate of interest is also "simply determined by the condition that the demand for capital is equal to the amount available" (LT 84), Dr. Dickinson takes great pains to show how the S.E.C. will, on the basis of the alternative plans of activity drawn up by the different undertakings, construct an aggregate demand schedule for capital which will enable it to determine that rate of interest at which the demand for capital will equal supply. The ingenuity and the astounding trust in the practicability of even the most complicated constructions which he displays in this connection may be illustrated by his statement that in a certain case " it will be necessary to establish a provisional rate of interest, then to allow the different organs of collective economy to re-contract with each other on the basis of this provisional rate, and so to draw up their final demand schedule for capital " (D 83n).

All this, however, does not meet the main difficulty. If indeed it were possible to accept at their face value the statements of all the individual managers and would-be managers about how much capital they could with advantage use at various rates of interest, some such scheme as such might appear feasible. It cannot be too often repeated, however, that the planning authority cannot be conceived " simply as a kind of super-bank which lends the available funds to the highest bidder. It would lend to persons who have no property of their own. It would therefore bear all the risk and would have no claim for a definite amount of money as a bank has. It would simply have rights of ownership over all real resources. Nor can its decisions be confined to the redistribution of free capital in the form of money, and perhaps of land. It would have to decide whether a particular plant or piece of machinery should be left further to the entrepreneur who has used it in the past, at his valuation, or whether it should be transferred to another who promises a higher return for it."

These sentences are taken from the essay where the present author discussed five years ago the " possibility of real competition under socialism ".[1] At that time such systems had only been vaguely discussed and one could hope to find an answer when systematic expositions of the new ideas should become available. But it is most disappointing to find no answer whatever to these problems in the two books now under discussion. While throughout the two works claims are made about how beneficial the control of investment activity would be in many respects, no indication is given of how this control is to be exercised and of how the responsibilities are to be divided between the planning authorities and the managers of the " competing " industrial units. Such statements as we find, as for instance that " because the managers of socialist industry will be governed in some choices by the direction laid down by the planning authority, it does not follow that they will have no choice at all" (D 217), are singularly unhelpful. All that seems to be fairly clear is that the planning authority will be able to exercise its function of controlling and directing investment only if it is in a position to check and repeat all the calculations of the entrepreneur.

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[1] *Collectivist Economic Planning*, 1935, pp. 232–237.

It seems that here the two writers are unconsciously led to fall back on the earlier beliefs in the superiority of a centrally directed system over a competitive system and to console themselves with the hope that the "omnipresent, omniscient organ of the collective economy" (D 191) will possess at least as much knowledge as the individual entrepreneurs and will therefore be in as good if not in a better position to make the decisions as the entrepreneurs are. As I have tried to show on another occasion, it is the main merit of real competition that through it use is made of knowledge divided between many persons which, if it were to be used in a centrally directed economy, would have all to enter the single plan.[1] To assume that all this knowledge would be automatically in the possession of the planning authority seems to me to be to miss the main point. It is not quite clear whether Professor Lange means to assert that the planning authority will have all this information when he says that "the administrators of a socialist economy will have exactly the same knowledge, or lack of knowledge, of the production functions as the capitalist entrepreneurs have" (LT 61). If the "administrators of a socialist economy" here means merely all the managers of the units as well as of the central organisation taken together, the statement can of course be readily accepted, but does in no way solve the problem. But if it is intended to convey that all this knowledge can be effectively used by the planning authority in drawing up the plan, it is merely begging the whole question and seems to be based on the "fallacy of competition".[2]

On this whole all-important question of the direction of new investment and all that it involves, the two studies do not really give any new information. The problem remains where it was five years ago and I can confine myself on this point to repeating what I said then: "The decision about the amount of capital to be given to an individual entrepreneur and the decisions thereby involved concerning the size of the individual firm under a single control are in effect decisions about the most appropriate combination of resources. It will rest with the central authority to decide whether one plant located at one place should expand rather than another plant situated elsewhere. All this involves planning on the part of the central authority on much the same scale as if it were actually running the enterprise. And while the individual entrepreneur would in all probability be given some definite contractual tenure for managing the plant entrusted to him, all new investments will be necessarily centrally directed. This division in the disposition over the resources would then simply have the effect that neither the entrepreneur nor the central authority would be really in a position to plan, and that it would be impossible to assess the responsibility for mistakes. To assume that it is possible to create conditions of full competition without making those who are responsible for the decisions pay for their mistakes seems to be pure illusion. It will be at best a system of quasi-competition where the persons really responsible will not be the entrepreneur but the official who approves his decisions and where in consequence all the difficulties will arise in connection with freedom of initiative and the assessment of responsibility which are usually associated with bureaucracy."[1]

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[1] See the article on "Economics and Knowledge." ECONOMICA, February, 1937.

[2] Another and even worse instance of this fallacy occurs in Professor Lippincott's introduction to the essays of Professors Lange and Taylor, when he argues that "there can be no doubt that the Central Planning Board would exercise great power, but would it be any greater than that exercised collectively by private boards of directors? Because the decisions of private boards are made here and there, this does not mean that the consumer does not feel their collective impact, even though it may take a depression to make him aware of it."

IX

The question how far a socialist system can avoid extensive central direction of economic activity is of great importance quite apart from its relation to economic efficiency: it is crucial for the question of how much personal and political freedom can be preserved in such a system. Both authors show a reassuring awareness of the dangers to personal freedom which a centrally planned system would involve and seem to have evolved their competitive socialism partly in order to meet this danger. Dr. Dickinson even goes so far as to say that "capitalist planning can exist only on the basis of fascism" and that in the hands of an irresponsible controller even socialist planning "*could* be made the greatest tyranny the world has ever seen" (D 22, 227). But he and Professor Lange believe that their competitive socialism will avoid this danger.

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[1] *Collectivist Economic Planning*, p. 237.

Now if competitive socialism could really rely for the direction of production largely on the effects of consumers' choice as reflected in the price system and if the cases where the authority will have to decide what is to be produced and how were made the exception rather than the rule, this claim would be to a large extent substantiated. How far is this really the case? We have already seen that with the retention of the control over investment the central authority wields most extensive powers over the direction of production, much more extensive indeed than is easily possible to show without making this discussion unduly long. To this have yet to be added however a further number of arbitrary elements of which Dr. Dickinson himself gives a quite substantial although by no means complete list (D 205). There is in the first instance the "allocation of resources between present and future consumption" which, as we have already seen, always involves a decision about what particular needs will be satisfied and which needs will not be satisfied. There is, secondly, the need for arbitrary decision in respect to the "allocation of resources between communal and individual consumption" which, in view of the great extension of the "division of communal consumption" which he envisages means that another very large part of the resources of the society is put outside the control of the price mechanism and subject to purely authoritarian decision. Dr. Dickinson expressly adds to this only "the choice between work and leisure" and the "geographical planning and the pricing of land", but at other points of his exposition further questions emerge on which he wants effective planning in order to correct the results of the market. But although he (and still more so Professor Lange) frequently hint at the possibilities of "correcting" the results of the price mechanism by judicious interference, this part of the programme is nowhere clearly worked out.

What our authors here have in mind perhaps comes out clearest in Dr. Dickinson's attitude towards the problem of wage changes: "If wages are too low in any one industry, it is the duty of the planning organ to adjust prices and quantities produced, so as to yield equal wages to work of equal skill, responsibility, and difficulty in every industry" (D 21). Apparently here the price mechanism and the free choice of occupation is not to be relied upon. Later we learn that although "unemployment in any particular job affords a prima facie case for lowering the standard wage" (D 127), a lowering of wages is objectionable "on social grounds, because a lowering in wages . . . causes discontent; on economic grounds, because it perpetuates an uneconomic allocation of labour to different occupations". (How?) Therefore, "as invention and improved organisation makes less labour necessary to satisfy human wants, society should set itself to discover new wants to satisfy" (D 131). "The powerful engine of propaganda and advertisement, employed by public organs of education and enlightenment instead of by the hucksters and panders of private profit-making industry, could divert demand into socially desirable directions while preserving the subjective impression (*sic*) of free choice" (D 32).

When we add to this and many other similar points where Dr. Dickinson wants his S.E.C. to exercise a paternalistic control,[1] the fact that it will be necessary to co-ordinate national production "with a general plan of exports and imports" (D 169), since free trade "is inconsistent with the principles of collectivism" (D 176), it becomes fairly evident that there will be precious little economic activity which will not be more or less immediately guided by arbitrary decisions. In fact, Dr. Dickinson expressly contemplates a situation where "the state, through a definite planning organ, makes itself responsible for the consideration of economic activity as a whole" and even adds that this destroys the "illusion" maintained in a capitalist society "that the division of the product is governed by forces as impersonal and inevitable as those which govern the weather" (D 21). This can only mean that, with most other planners, he himself thinks of production in his system as one which is largely directed by conscious and arbitrary decisions. Yet in spite of this extensive rôle which arbitrary decisions are to play in his system, he is confident (and the same applies to Professor Lange) that his system will not degenerate into an authoritarian despotism.

Dr. Dickinson just mentions the argument that "even if a socialist planner wished to realise freedom he could not do so and remain a planner", yet the answer he gives makes one doubt whether he has quite seen on what considerations this argument is based. His answer is merely that "a plan can always be changed" (D 227/8). But this is not the point. The difficulty is that, in order to plan at all on an extensive scale, a much more extensive agreement among the members of the society about the relative importance of the various needs is required than will normally exist, and that in consequence this agreement will have to be brought about and a common scale of values will have to be imposed by force and propaganda. I have developed this argument at length elsewhere and I have not space here to restate it.[1] And the thesis I have developed there, that socialism is bound to become totalitarian, now seems to receive support from the most unexpected quarters. This at least appears to be the meaning when Mr. Max Eastman, in a recent book on Russia, states that "Stalinism *is* socialism, in the sense of being an inevitable, although unforeseen, political and cultural accompaniment."[2]

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[1] Cf. for instance the passage (D 52) where Dr. Dickinson speaks about the "people who will not pay voluntarily beforehand for what they are only too glad to have once they have it."

In fact, although he does not seem to see it, Dr. Dickinson himself, in the concluding passages of his book, makes a statement which comes very much to the same thing. "In a socialist society," he says, "the distinction, always artificial, between economics and politics will break down; the economic and the political machinery of society will fuse into one" (D 235). This is of course precisely the authoritarian doctrine preached by Nazis and Fascists. The distinction breaks down because in a planned system all economic questions become political questions, because it is no longer a question of reconciling as far as possible individual views and desires, but one of imposing a single scale of values, the "social goal" of which socialists ever since the time of Saint-Simon have been dreaming. In this respect it seems that the schemes of an authoritarian socialist, from those of Professor Hogben and Mr. Lewis Mumford, whom Dr. Dickinson mentions as an example (D 25), to those of Stalin and Hitler, are much more realistic and consistent than the beautiful and idyllic picture of the "libertarian socialism" in which Dr. Dickinson believes.

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[1] See *Freedom and the Economic System* (Public Policy Pamphlet, No. 29), University of Chicago Press, 1939.

[2] Max Eastman, *Stalin's Russia and the Crisis in Socialism*, New York, 1940. As the book is not yet available in this country, the quotation is taken from a review that appeared in the American press.

X

There can be no better testimony of the intellectual quality of the two books under discussion than that after having written about them at such length one is conscious of having only just scratched on the surface of the problems raised by them. But an examination in greater detail would clearly exceed the scope of an article; and since many of the doubts which are left with the reader concern points which are not answered in the two books, an adequate treatment of the subject would require another book even longer than those discussed. There are however also important problems which are discussed at some length, particularly in Dr. Dickinson's book, which we have scarcely been able to mention. This applies not only to the difficult problem of the combination of a private sector with the socialised sector, which both authors propose, but also to such important problems as the international relations of a socialist community and to the problems of monetary policy, to which Dr. Dickinson devotes a very brief, and on the whole the least satisfactory, section.

A fuller discussion would also have to point out various passages in the argument of both authors where apparently residues of earlier beliefs or views which are purely matters of political creed creep in and strike one as curiously inconsistent with the plane of the rest of the discussion. This applies for instance to Dr. Dickinson's repeated references to class-conflict and exploitation or his gibes at the wastes of competition (D 22, 94), and to much of Professor Lange's interesting section on the " economist's case for socialism ", where he seems to employ arguments of somewhat questionable validity.

These, however, are minor points. On the whole the books are so thoroughly unorthodox from a socialist point of view that one rather wonders whether their authors have not retained too little of the traditional trappings of socialist argument to make their proposals acceptable to socialists who are not economists. As courageous attempts to face the real difficulties and completely to remould socialist doctrine to meet them they deserve our gratitude and respect. Whether the solution offered will appear particularly practicable, even to socialists, may perhaps be doubted. To those who, with Dr. Dickinson, wish to create " for the first time in human history, an effective individualism " (D 26), a different path will probably appear more promising.

Industrial Activity in the Eighteenth Century

By J. H. Wilson

The early history of the modern trade cycle is shrouded in mystery. The date of its birth is unknown, and various writers have placed it in the sixteenth, seventeenth, eighteenth and nineteenth centuries. The variation in these estimates is chiefly due to the sparseness of industrial data before 1850 and has led to an undue preoccupation with financial indices and movements of speculative activity.[1] In recent months, however, Sir William Beveridge has made a study of the evidence of industrial activity from 1785–1850, and has published the results in an article in *Oxford Economic Papers* No. 3. In this study, every one of the thirty-odd series examined relates to physical production or trade. In no case have prices, or total values involving prices, been used. The result has been to prove conclusively the existence of a rhythmical fluctuation in British industrial activity over the whole of the period covered by the inquiry.

The present study is an attempt to use the same method for an earlier period, namely the seventy years from 1717 to 1786. As in the 1785–1850 inquiry attention has been confined to purely physical indices of production. Unlike the later inquiry, however, the results obtained have been severely limited by the deficient quantity and quality of the series used. In all, 21 series were obtained, with an average length of 27 years. More criticism can be levelled at the quality, however, than at the quantity. While some series, such as wool, coal, shipping, are comprehensive, others merely show the product of small individual sources of production, and are useful only in so far as they can be considered typical of the industries they represent. This weakness applies especially to the iron and steel figures. Apart from four short series of import statistics (with an average length of 11½ years) the principal data show the output of two small South Yorkshire foundries.

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[1] Eighteenth century writers were concerned chiefly with speculation and bubbles. W. S. Jevons's survey of eighteenth century business activity is based on financial indices. In more recent years the gap has been partly filled by an article by W. Hoffmann, "Ein Index der industriellen Production für Grossbritannien seit dem 18 Jahrhundert" in *Weltwirtschaftliches Archiv*, September, 1934. This is concerned, however, with secular rather than cyclical movements, and is deficient in revealing the latter in that the secular trend is not eliminated.

The following table gives the nature, as well as the dates, of the series used. Their sources and crude statistical content will be found in the Appendix.

I. *Coal* (data available 1717–86).
  (*a*) Coal imported into London, 1717–86.
  (*b*) Output of a Derbyshire colliery, 1765–75.
  (*c*) Exports of coal from the Tyne, 1723–67.
  (*d*) Exports of coal from the Wear, 1748–86.

II. *Iron and Steel.*
  (*a*) Output of the Bank furnace, 1717–1743.
  (*b*) Output of the Colnbridge forge, 1717–1749.
  (*c*) Pig iron imported into England from America, 1739–1748, 1750–5, 1761–76.
  (*d*) Iron imported from foreign countries, 1711–1718, 1729–35, 1750–55.
  (*e*) Steel imported from foreign countries, 1719–35.
  (*f*) Bar iron imported from foreign countries, 1761–75.

III. *Textiles.*
  (*a*) Wool :—broad cloth milled in Yorkshire, 1726–86.
  (*b*) Imports of Indian cotton, 1720–44.
  (*c*) Cotton retained for home consumption, 1741–9.
  (*d*) Linen stamped in Scotland, 1728–86.

IV. *Other Series.*
  (*a*) Tin produced in Cornwall, 1717–49, 1754–86.
  (*b*) Shipping cleared outwards, 1764–86.
  (*c*) Copper production, 1771–86.

When the series came to be used it was seen that the cyclical variations were partially obscured by markedly rising secular trends. These had to be eliminated by the process of fitting curves by the method of least squares. In the majority of cases second degree curves were used, though some series admitted of straight lines. In only one instance (iron produced at Colnbridge) had third degree methods to be used before evidence was forthcoming. The actual figures for each year were expressed as percentages of the line of trend. Table I shows the series for each commodity expressed in this way.

TABLE I.

	Coal	Iron and Steel	Wool	Cotton	Linen	Tin	Copper	Shipping
1717 ..	106·5	105·0				111·2		
1718 ..	96·7	101·0				108·7		
1719 ..	97·7	97·8				98·1		
1720 ..	97·2	96·1		85·2		97·7		
1721 ..	103·4	96·4		201·9		75·6		
1722 ..	101·8	92·3		43·1		91·6		
1723 ..	99·4	90·4		95·9		89·9		
1724 ..	97·0	108·7		86·2		103·7		
1725 ..	99·8	102·7		23·2		107·2		
1726 ..	107·7	108·1	113·3	216·7		97·7		
1727 ..	104·9	108·4	93·0	108·7		101·8		
1728 ..	95·8	96·3	103·5	45·6	67·4	93·1		
1729 ..	103·4	93·8	105·0	75·1	95·2	100·3		
1730 ..	95·8	96·0	112·6	120·1	105·7	98·0		
1731 ..	100·0	105·0	108·9	81·8	104·6	43·4		
1732 ..	94·8	84·3	100·0	185·2	112·6	116·7		
1733 ..	103·5	112·3	86·4	283·1	116·3	101·8		
1734 ..	93·5	119·3	85·0	23·6	115·5	114·5		
1735 ..	105·5	114·4	102·7	364·6	110·5	109·1		
1736 ..	105·2	115·0	108·2	160·7	98·8	95·7		
1737 ..	97·8	102·6	105·0	8·3	98·7	104·0		
1738 ..	101·6	83·9	102·8	12·0	94·0	82·8		
1739 ..	91·0	91·0	93·1	33·7	93·0	108·7		
1740 ..	116·8	90·4	101·3	13·3	86·1	102·9		
1741 ..	94·8	116·2	97·1	80·0	87·5	94·1		
1742 ..	95·4	95·9	91·2	45·4	77·0	107·6		
1743 ..	100·4	90·1	106·0	46·0	84·9	113·9		
1744 ..	98·2	91·1	94·1	70·0	88·8	112·3		
1745 ..	100·0	101·7	102·4	65·9	86·8	103·5		
1746 ..	103·4	95·0	109·8	110·4	83·2	114·6		
1747 ..	97·7	95·5	103·6	105·7	97·7	109·4		
1748 ..	93·0	93·6	103·4	219·7	104·4	118·5		
1749 ..	103·3	109·4	101·8	63·9	101·4	68·0		
1750 ..	92·7		102·7		101·1			
1751 ..	109·0		103·9		102·2			
1752 ..	101·0		95·7		110·1			
1753 ..	100·0		97·1		114·9			
1754 ..	104·7		100·4		105·6	102·2		
1755 ..	93·6		96·4		93·5	104·9		
1756 .	108·0		102·8		95·7	103·4		
1757 ..	99·0		112·8		106·3	103·0		
1758 ..	88·4		98·7		112·5	101·9		
1759 ..	106·4		94·3		111·7	98·5		
1760 ..	93·9		93·2		118·0	102·3		
1761 ..	94·1		89·3		117·3	90·2		
1762 ..	96·1	94·3	81·4		107·7	96·0		
1763 ..	106·1	91·8	86·7		115·2	100·4		
1764 ..	103·8	125·6	80·4		116·1	96·7		100·7
1765 ..	99·5	108·1	99·5		112·6	101·1		101·8
1766 ..	106·0	88·8	131·6		114·1	109·3		101·6
1767 ..	96·8	70·6	105·9		107·5	102·2		99·5
1768 ..	97·3	98·6	100·2		96·9	93·0		97·9
1769 ..	100·8	112·5	97·0		107·6	100·4		98·5
1770 ..	95·8	110·5	94·3		102·2	104·2		100·3
1771 ..	105·6	107·3	114·5		103·1	100·4	105·5	103·3
1772 ..	109·1	106·0	120·0		98·0	113·3	103·9	103·6
1773 ..	97·8	104·4	83·4		78·7	101·8	100·5	103·4
1774 ..	93·2	90·2	90·0		81·7	89·2	108·3	102·3
1775 ..	101·0	94·6	93·4		85·0	96·0	105·6	103·9
1776 ..	105·3		102·1		92·9	96·7	101·8	103·2
1777 ..	105.7		126·4		99·1	103·4	96·5	101·2
1778 ..	98·5		101·2		87·0	95·5	82·6	96·5
1779 ..	89·4		82·8		82·7	100·7	102·4	94·0
1780 ..	98·7		84·6		84·4	110·2	79·2	91·1
1781 ..	97·0		89·0		93·5	97·1	91·8	90·4
1782 ..	97·8		101·6		92·7	92·5	88·3	92·4
1783 ..	102·7		104·4		101·0	90·5	110·7	95·3
1784 ..	104·0		113·3		111·0	96·1	111·9	98·4
1785 ..	102·6		108·3		98·2	101·3	111·0	97·2
1786 ..	100·6		100·5		97·5	116·5	118·3	100·1

It is clear from the table that all industries show fluctuations in the volume of physical output. These fluctuations, however, cannot be regarded as cyclical. Although in the coal series, for instance, the first ten years would suggest a four or five year cycle, there is nothing in the next thirty years more interesting than year to year fluctuations across the base line. Iron and steel show an apparent cycle in the first fifteen years and then relatively short period fluctuations to 1749. The second iron series, however, shows a well marked cycle with peaks in 1764 and 1769. Wool shows the clearest tendency to a cyclical movement on the modern pattern, with peaks in 1730, 1736, 1746, 1757, 1766, 1772, 1777, and 1784. Only three years (1740, 1743, and 1754) are off the regular cycle track. Cotton and linen show some evidence of the cycle, while tin provides none. Copper has little, but shipping a good cyclical movement.

When the table is viewed as a whole the most obvious feature is the lack of correspondence between the individual series. The industries which show cyclical fluctuations reveal no simultaneity of booms or depressions. It is true that 1726 was a boom year for four of the five series for which figures are available, tin being the exception, that 1734–6 were boom years for six industries, but it is not until 1772 that we find anything approaching a modern trade cycle boom. 1784 is clearly a good year, these two years being the first two peaks of the cycle whose later history is traced in the article by Sir William Beveridge, to which reference has already been made.

The absence of correspondence between individual series is borne out by a number of correlation coefficients between industry-group series. The groups taken are Coal, Iron and Steel, Textiles, and Other Series. The group index number is a weighted average of the values for each series, the weights varying inversely with the standard deviation of the series.[1]

Table II shows the four group-series.

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[1] This latter provision was designed to eliminate the effects of large fluctuations in those series which, being small sources of production, varied widely from year to year, or over a cycle. The indices are further weighted in accordance with their importance in eighteenth century industry. They are listed in a Note in the Appendix.

TABLE II.
GROUP-SERIES

	Coal	Iron and Steel	Textile	Others
1717	109·4	105·0		105·2
1718	95·2	101·0		104·0
1719	96·7	97·8		99·1
1720	95·9	96·1	97·6	99·0
1721	104·9	96·4	118·6	88·8
1722	102·6	92·3	89·5	96·1
1723	99·1	90·4	99·2	95·4
1724	95·2	108·7	97·6	101·7
1725	99·5	102·7	86·3	103·3
1726	108·9	108·1	121·3	99·0
1727	108·8	108·4	90·4	100·8
1728	92·4	96·3	95·0	96·8
1729	106·4	93·8	104·2	100·1
1730	97·3	96·0	116·5	99·1
1731	106·8	105·0	111·3	73·9
1732	94·9	84·3	104·5	107·7
1733	105·1	112·3	91·3	100·8
1734	94·5	119·3	85·2	106·7
1735	104·4	114·4	110·2	104·2
1736	106·7	115·0	110·3	98·0
1737	97·3	102·6	107·1	101·9
1738	98·8	83·9	100·3	92·1
1739	94·1	91·0	89·2	104·0
1740	118·2	90·4	96·6	101·3
1741	91·9	116·2	93·1	97·3
1742	93·4	95·9	117·0	103·5
1743	101·8	90·1	88·7	106·4
1744	95·5	91·1	90·0	105·7
1745	100·5	101·7	99·5	101·6
1746	104·1	95·0	107·1	106·7
1747	92·1	95·5	103·7	104·3
1748	93·7	93·6	105·0	108·5
1749	98·5	109·4	102·6	85·2
1750	97·2		103·9	
1751	103·5		105·7	
1752	104·8		97·1	
1753	100·8		100·5	
1754	102·5		102·1	102·5
1755	96·8		93·5	105·5
1756	105·1		102·4	103·8
1757	96·6		118·2	103·4
1758	88·5		101·8	102·1
1759	103·4		95·8	98·3
1760	93·5		96·3	96·5
1761	95·9		91·0	102·7
1762	92·9	94·3	78·4	107·0
1763	98·4	91·8	87·1	99·0
1764	106·9	125·6	79·3	99·7
1765	103·2	108·1	96·9	104·1
1766	105·8	88·8	136·5	105·4
1767	99·4	70·6	109·7	95·8
1768	96·3	98·6	101·0	99·3
1769	99·8	112·5	103·6	100·1
1770	99·1	110·5	93·4	97·0
1771	110·3	107·3	115·3	104·8
1772	108·5	106·0	123·6	109·4
1773	99·5	104·4	72·9	99·8
1774	97·0	90·2	107·9	104·6
1775	102·5	94·6	90·1	103·7
1776	110·1		100·2	103·7
1777	107·8		131·8	104·9
1778	97·7		98·5	91·9
1779	86·9		73·5	88·3
1780	95·1		75·8	96·6
1781	90·3		84·0	83·2
1782	90·8		115·7	86·7
1783	98·5		103·2	102·6
1784	100·4		116·3	96·0
1785	103·1		110·8	111·0
1786	99·9		100·8	100·1

It is at once apparent that there is extremely little correspondence between the four series. This is confirmed by the following table of correlation coefficients :—

TABLE III.

	Iron and Steel	Textiles	Others
Coal	+·196	+·326	+·147
Iron and Steel ..	..	−·156	−·059
Textiles	..	..	+·080

Of the six coefficients only one—that between coal and textiles—is significant. Dr. Fisher's table of significance shows that for 60 pairs of numbers the chance of a coefficient greater than .3248 is 1 in 100, for 70 pairs, .3017. The figure of +.326 for the coal–textile correlation, covering 67 pairs, is therefore unlikely to be the result of an accident. For the rest, the perverse behaviour of iron and steel, with insignificant negative coefficients, is sufficient to demonstrate that it is impossible to find evidence of an eighteenth century trade cycle affecting all industries *pari passu*.

An interesting feature of the group tables is the clearly marked cycle in textile activity. This, largely reflecting movements in the wool index, shows peaks in 1721, 1726, 1730, 1736, 1742, 1757, 1766, 1772, 1777, and 1784, an average period of seven years. In view of this, and the correlation between coal and textiles, it is interesting to see whether a general index of industrial activity, giving these two industries their proper weight, will show the same cyclical tendency.

The one shown in Table IV was constructed in the same way as the industry-group indices. The deviations for each year were divided by the standard deviations for the series and the results combined in a weighted average.[1] The average was multiplied by the mean standard deviation for the twenty-one series. The table and chart show the general index, together with a three year running average, to even out chance fluctuations.

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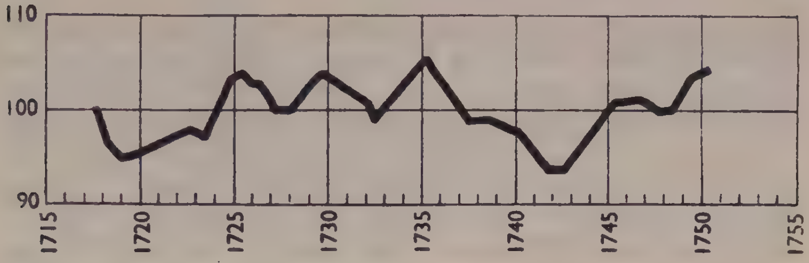
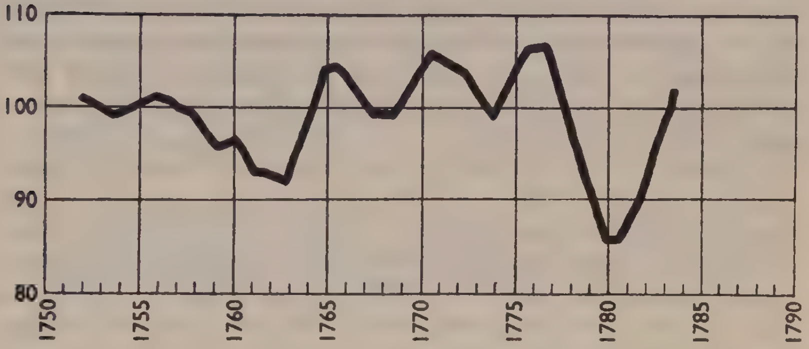
[1] The same weights were used as in the construction of the industry-group indices.

TABLE IV.

GENERAL INDEX OF INDUSTRIAL ACTIVITY, AND THREE YEAR RUNNING AVERAGE.

Year	Industrial Index	3-year running average
1717	110·9	
1718	95·9	101·0
1719	96·2	95·8
1720	95·4	95·6
1721	95·3	96·9
1722	99·9	97·4
1723	97·1	98·1
1724	97·2	97·9
1725	99·3	103·0
1726	112·4	104·5
1727	101·7	102·8
1728	94·3	100·0
1729	103·9	101·0
1730	104·7	105·0
1731	106·5	103·2
1732	98·5	101·7
1733	100·0	97·5
1734	93·9	100·4
1735	107·2	103·1
1736	108·1	105·7
1737	101·9	102·6
1738	97·9	97·5
1739	92·7	98·8
1740	105·9	97·9
1741	95·2	97·2
1742	90·4	93·2
1743	94·0	92·9
1744	94·2	96·0
1745	99·9	99·5
1746	104·5	100·7
1747	97·8	100·7
1748	99·8	99·2
1749	100·1	100·0
1750	100·1	101·5
1751	104·2	101·9
1752	101·4	102·0
1753	100·5	101·4
1754	102·3	99·6
1755	96·0	100·7
1756	103·8	101·9
1757	105·9	101·5
1758	94·9	100·2
1759	100·0	96·5
1760	94·7	97·4
1761	97·5	93·4
1762	87·9	93·7
1763	95·6	92·5
1764	93·9	98·0
1765	104·4	104·6
1766	115·4	104·7
1767	94·4	102·8
1768	98·7	98·6
1769	102·6	99·5
1770	97·2	103·3
1771	110·0	106·9
1772	113·4	105·4
1773	92·8	103·0
1774	102·8	98·5
1775	99·8	102·8
1776	105·7	106·6
1777	114·3	107·2
1778	101·6	99·2
1779	81·8	91·1
1780	89·9	84·9
1781	82·9	85·6
1782	84·1	89·7
1783	102·0	96·3
1784	102·7	103·4
1785	105·6	102·8
1786	100·2	





The three-year average suggests that the birth date of the modern cycle is in the seventeen-sixties. The boom of 1766 is followed by similar periods of prosperity in 1771,[1] 1777, and 1784. Prior to the 'sixties it is less easy to point to boom years. The cycle took the form of short period fluctuations superimposed on a long cycle of some twenty years. From 1725–1737 the index was only once below the line of trend, but during that period minor peaks can be observed for the years 1726, 1730, and 1736. From 1737 to 1749 it barely rose above the trend line. For the next ten years it remained high, and then kept low until 1763, from which point it began to climb to the peak of 1766.

One of the features of the post-1785 cycle is the high correlation of the industrial index, with prices, consumption, financial and what may be termed social indices.[2] The eighteenth century index shows very little correlation with what few indices of consumption and finance are available. There is no satisfactory price index of the period. One is at present being calculated on the basis of Sir William

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[1] The general index shows the boom in 1772, but owing to the sharp recession from 1772 to 1773, the three-year moving average reaches its maximum in 1771.

[2] For correlations see the article by Sir William Beveridge, *loc. cit.*

Beveridge's price tables in his *Prices and Wages in England* (*The Mercantile Era*), but it was not ready in time for use in the present paper. Two useful financial indices are obtainable from Rogers's *History of Agriculture and Prices.*

The first of these is the price of East India Company 3 per cent. stock, an annual average of which shows a strong cyclical variation.[1] This dates back considerably further than the industrial index. The other is the price of consolidated 3 per cent. stock from 1730, which also reveals cyclical variations.[2] Whereas the former shows no correlation with the industrial index, the second shows a coefficient of + .333, which is sufficiently significant to indicate a real relationship. The association of prosperous business conditions with a low *yield* on gilt-edged differs from the present-day cycle. It is, however, in accord with the experience of 1785–1849, where the *price* of stock and the industrial index vary together.[3] The correlations with consumption—wine, sugar, cattle and sheep sold at Smithfield—are insignificant.[4]

The conclusion emerging from this last fact is that industrial fluctuations played an unimportant part in eighteenth century life. In an economy very largely agricultural they had no effect on consumption or exports, and had a connection only with consol prices. The trade cycle as it existed from the beginning of the nineteenth century was a generalised phenomenon affecting every department of industry and trade, and being closely connected with finance and social conditions. In the eighteenth century, fluctuations there were, but they were, in the main, localised to particular areas, or confined to individual industries. Many writers could speak of industrial fluctuations, but the phenomenon they were describing was generally a boom and depression affecting only one industry, generally wool.[5]

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[1] J. Thorold Rogers, *op. cit.*, Vol. VII, Part II, pages 798–883.

[2] *Ibid.*, pp. 884–940.

[3] Compare the article by Sir William Beveridge, *loc. cit.*, with a suggested explanation. A correlation with export values was barely significant.

[4] The wine series is that of wine imports, 1697–1786, obtained from James Warre, *The Past, Present and probably the future state of the Wine Trade* (1823), Appendix N, p. 99. The sugar figures (1731–80) are taken from Adam Anderson, *Origin of Commerce*, vol. iv, p. 320. The sheep and black cattle sold at Smithfield, 1731–1770, are taken from p. 156 of the same book.

[5] Defoe in his *Plan of the British Commerce* (1728) has an interesting chapter on the course of a boom and slump in wool. Attacking the pessimists who foresaw the decay of the English woollen industry he drew a sharp distinction between a secular decline and a cyclical depression following a boom. His account of industrial fluctuations, which occupies several pages, is largely in terms of over-production. He describes a boom resulting from a sudden increase in demand. The boom is marked by high prices and wages, by a flock to the towns and a shortage of labour, and in the later stages by the piling up of stocks of finished goods.

". . . the Manufacturers have made their good Fortune in Trade a Bubble upon

Comment has already been made on the early manifestation of a wool production cycle.

The findings, mainly negative, which have resulted from this inquiry may be summarised as follows:—

I. Most of the series examined show fluctuations of a cyclical or quasi-cyclical kind, but these different series show little apparent connection between one another.

II. A textile cycle is in evidence as far back as 1717 and continues throughout the century.

III. There is some correspondence between the fluctuations of coal production and those of textile activity.

IV. The movements in these two industries which played a predominant part in eighteenth century industrial life cause the general index to show the working of the cycle.

V. Industrial cycles have little effect on consumption in a mainly agricultural economy, while finance and exports are but imperfectly correlated with them.

VI. It is not until the later part of the century that the growing interdependence of the separate industries—due to reciprocal demand, wide markets and a more fully developed financial system—causes all industries to fluctuate in harmony.

The above conclusions are only provisional. The uncertainty surrounding them arises from the imperfect nature of the series used. It is possible that fuller production series would have given a different general index. In particular the perverse behaviour of the iron and steel index may be due to the fact that the series used related to only two small sources of production. Not until the material derived from research into the records of the Darbys and other iron producers is made available will it be possible to construct an adequate index of iron production.

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themselves, and having over-run the Market with their Goods, it returns upon them like the late *South Sea*, and everything goes back from its imaginary to its intrinsick Value.

"The Demand abates, . . . the Price sinks, the poor Spinners and Workfolk are dismiss'd to starve. But the Cause is not in the Trade, but in the Workmen, not in the Manufacture, but in the Manufacturers; the Quantity of Goods made are too many for the Consumption, and the Market is perhaps glutted for a Year or more to come; and thus and no otherwise the Commerce is abated; that is there is no real Abatement of the Trade, only it must have Time given to waste the over-made Quantity."

APPENDIX

1. SOURCES.

COAL ..	Coal imported into London „ exported from the Tyne, „ „ „ „ Wear	T. S. Ashton and J. Sykes, *The Coal Industry in the Eighteenth Century*, p. 247.
IRON ..	Output of Colnbridge and Bank Foundries, Yorkshire Imports (eight series)	*Economic History Review*, May, 1939, p. 184. H. Scrivenor, *History of the Iron Trade.* 2nd edn. 1854. Appendix.
WOOL ..	Broad cloth milled in Yorkshire	J. Bischoff, *History of the Woollen and Worsted Manufactures.* Vol. II. Appendix. Table IV.
COTTON	Imports of Indian cotton	Mann, *Cotton Trade of Great Britain*, p. 20.
	Cotton retained for home consumption	J. Macpherson, *Annals of Commerce.*
LINEN ..	Linen stamped in Scotland	A. Warden, *The Linen Trade*, p. 480.
TIN ..	Produce of Cornish tin-mines	*Journal of Royal Statistical Society*, 1839, p. 261.
COPPER	Produce of Cornish mines	G. R. Porter, *Progress of the Nation* (1850), p. 272.
SHIPPING	Tonnage cleared outwards	W. Page, *Commerce and Industry*, Vol. II. *Statistical Tables* (1919), p. 63.

Consumption and financial sources appear in the footnotes to the text.

2. WEIGHTS.

The system of weights is based on an estimate of the value of production of various commodities 1781–3 found in a number of works, including Macpherson's *Annals of Commerce*, Vol. IV, pp. 15–16, and Anderson's *Origin of Commerce*, Vol. IV, p. 522. The weights are as follows :—

Wool	16
Shipping	15
Coal	12
Linen	4
Iron and Steel	4
Cotton	2
Copper	2
Tin	1

The Bank and Its Treasure

By J. K. Horsefield

> "'*A hypothesis which holds the field*', *as the scientists say of a theory for which there is no evidence so far.*"
>
> —G. K. Chesterton.

I

The monetary literature of the early nineteenth century is richly discursive in theoretical discussion but comparatively taciturn on details of practice. We hear a great deal, for example, about what the Bank of England ought to do but relatively little about what it actually did. The monetary policies pursued have often to be inferred from slender indications buried in a profusion of irrelevant chatter. Even when Bank officials were actually questioned, by the periodic Parliamentary Committees, the answers given were rarely such as help us much to-day.

For this fact there were many good reasons. Sometimes the Committees appear not to have known what questions to ask; sometimes, when they did, the Bank's representatives were unable, or perhaps unwilling, to answer. And there was often a divergence of opinion between the Committees and the Bank as to what the latter's functions were. All these things tend to leave the activities of the Bank somewhat obscure.

But still more important was the complete statistical black-out. No Committee between 1696 and 1832 was allowed to know the amount of the Bank's cash holdings. It is true that the Committees of 1797 and 1819 were furnished with "scales" showing proportional variations in the "treasure", and that these were successfully interpreted by ingenious commentators. But the Committees themselves were officially without information on the point. Not until the renewal of its Charter became due in 1833 was the Bank prevailed upon to supply a continuous record of its assets and liabilities. The information was then given for the last week-day in February and August for each year from 1778 to 1832; it is this record which we shall here use.

Another difficulty which confronts the modern investigator is that each Committee was appointed to pursue a specific, and different, enquiry. In 1797 the subject was the Restriction of Cash Payments; in 1810, the High Price of Bullion; in 1819, the Resumption of Cash Payments; in 1832, the Bank's monopoly. Hence there was no continuity of outlook from Committee to Committee and very little progressive revelation of Bank policy. And except in those years when Parliament held an enquiry, the Bank continued, sphinx-like, to hold its own counsel.

Our present purpose is to try to penetrate this reticence on one particular point, viz.: the relationship between the Bank's cash holding and its notes and deposits during some of these years. This relationship was, of course, much less important during the Bank Restriction, and it is not surprising that the Committees of 1810 and 1819 failed to elucidate it. But the Committee of 1797 also failed to do so, though not for want of trying:

Examination of Samuel Bosanquet (Director and formerly Governor) on March 31st, 1797:

> *Q.* "Will it appear . . . in what Proportion the Bank regulates its Issues on Discounts with reference to the State of its Cash, and the Amount of its outstanding Notes?"
>
> *A.* "No—I conceive it will not: Because, although the Directors have Attention to the State of their Cash and Notes out, yet they have no stated or precise Rule to regulate their Conduct."

It will be seen from this question that the Committee appear to have expected the cash holding to bear some ratio to the note-issue alone, and not to notes plus deposits. This is also borne out by other questions asked by the same Committee:

Examination of Samuel Hoare (Banker, and Shareholder in the Bank of England) on March 23rd, 1797:

> *Q.* "Is it now, or was it ever your Understanding or Opinion, that the Bank of England, kept Cash equal, or nearly equal, to the Amount of the Sums secured by all the Bank Notes in Circulation?"
>
> *A.* "No; my opinion is, that they generally preserved

> a Proportion, as 3 to 5, that is, if they had three Millions Sterling they might Issue five Millions Paper in Times of Security—this was only an Opinion, as I have no Knowledge on the Subject."

Pressed to state whether he meant that the Bank actually *had* kept such a proportion or that they *ought* so to do, Hoare added:

> " they had generally preserved that Proportion till the Commencement of the War."

The 1819 Commons Committee took a similar line, eliciting, for example, from *N. M. Rothschild* the opinion that:

> " . . . if they [the Bank] had to pay in gold they could not keep twenty-five millions of paper out, unless they keep half of that amount in gold, because there might be a run on them."

The practice which the Committees thus expected to find was, in fact, actually being adopted, by 1832, by most other Banks. Thus, *Henry Burgess*, Secretary of the Committee of Country Bankers, having estimated the average ratio as 25 per cent. against notes, added that no fixed reserve was kept against deposits because these were not strictly payable on demand. [*Q*. 5557.]

It is interesting to connect this prevalent view with the later delusion of the Currency School that it was sufficient to prescribe a gold reserve for the note-issue and allow deposits to look after themselves. But at least the Bank of England made no such mistake. When in 1832 it broke silence on this carefully guarded secret it was to announce a ratio of cash to notes and deposits together. This ratio was embodied in a rule known by the name of *Horsley Palmer*, the Governor of the Bank, who announced it to the Committee of that year in the following terms:

> [The rule] " with reference to the period of a full currency, and consequently a par of exchange, by which the Bank is guided in the regulation of their issues (excepting under special circumstances) is to invest and retain in securities, bearing interest, a given proportion of the deposits, and the value received for the notes in circulation, the remainder being held in coin and bullion; the proportions which seem to be desirable, under existing circumstances, may be stated at about two-thirds in securities and one-third in bullion; the circulation of

> the country, so far as the same may depend upon the Bank, being subsequently regulated by the action of the Foreign Exchanges." [*Q.* 72.]

Further light was thrown upon the crucial question of what was meant by "a full currency" by a subsequent answer given by *G. Warde Norman*, a Director. He also quoted the rule in evidence in almost identical terms with those employed by Palmer, and then explained that the currency was "full" when the exchanges were at par,

> "or rather on the point of becoming unfavourable." [*Q.* 2460.]

At other periods, it was explained:

> ". . . . the object is to keep the securities upon the whole at the same amount, or somewhat near the same amount, it is impossible to obtain perfect accuracy. . . . then . . . . the reduction of the treasure must show itself in the circulation and the deposits." [Norman's evidence, *QQ.* 2394, 2395.]

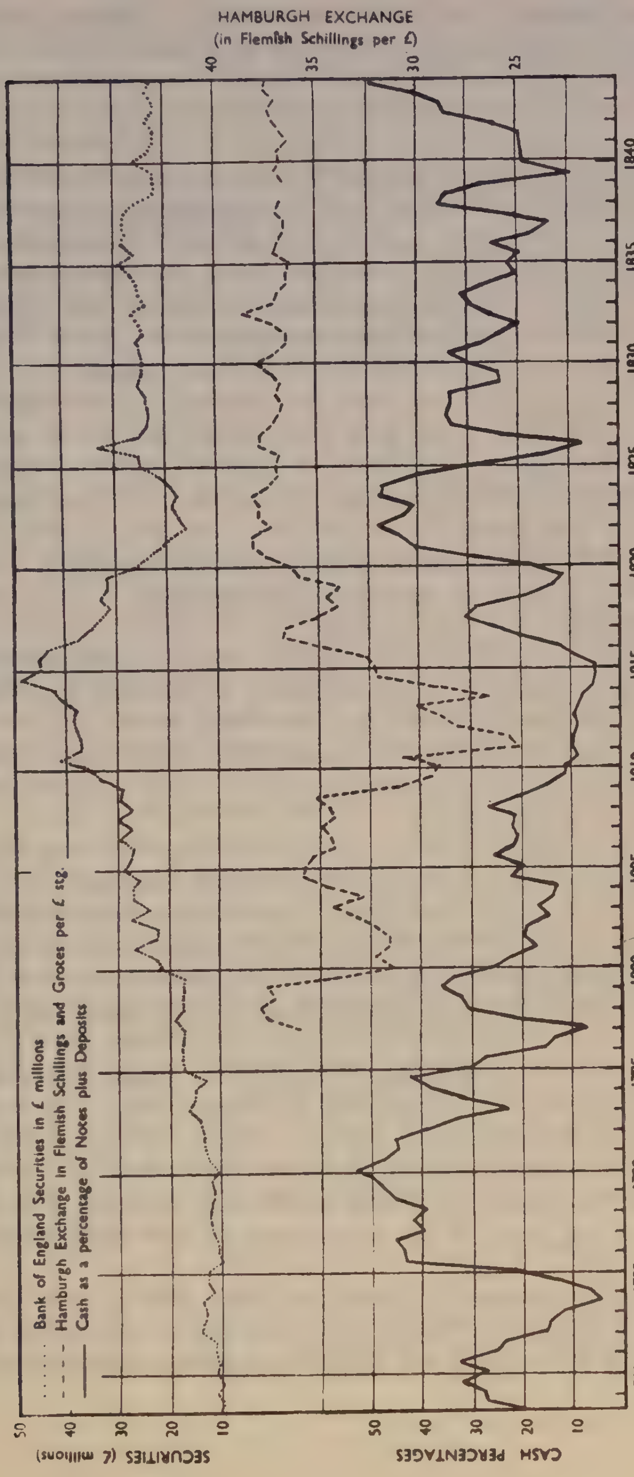
The constant level of the securities thus envisaged was, however, subject to modification if bullion movements were heavy. As Palmer remarked:

> "If the exchanges continue favourable for any great length of time, then the influx of treasure will command an increased issue of paper, and which may derange the proportions; but it does not follow that the Bank ought, upon that account, immediately to extend its issue upon securities. When, however, it is clearly ascertained to be desirable that part of the excess of bullion so received should be returned to the Continent, then it may be necessary for the Bank to re-assume its proportion, by transferring part of the bullion into securities, still preserving the proportions of one-third and two-thirds." [*Q.* 85.]

This proviso, coupled with the practical difficulty of applying so rigid a rule in any case, had the result shown in the dotted line on the accompanying chart; the stability of the securities was never absolute. It is therefore impossible to tell, merely by inspection of these data, for what period the rule was in operation.

Nor are the cash percentages more immediately helpful. The rule only required that when the ratio was at its maximum it should approximate to one-third; what therefore we want to know is, for how long was the Bank *trying* to attain

BANK OF ENGLAND STATISTICS AND HAMBURGH EXCHANGE—1778-1844



For Notes and Sources, see page 178.

this maximum? And why one-third? These are the questions which this note will try to answer.

II

All we know so far about the rule is that it was being applied in 1832. When was it introduced, and when abandoned? Before embarking on the detective work necessary to answer the first of these questions, we can dispose of the easier problem posed by the second. *Horsley Palmer* himself provides the information we need. Giving evidence to the 1840 Committee he was asked:

> *Q.* "Do you think that the principle of management, as laid down in 1832, with a larger proportion of bullion, and a smaller proportion of securities, with reference to their liabilities, would be the best rule for the management of the Bank?"
>
> *A.* "With reference to the whole circulation of the country, I think it would." [*Q.* 1596.]

and admitted:

> "I know of no other course which could be taken beyond holding a larger amount of bullion, but which I am not prepared to say the Bank could do without means being devised to remunerate that establishment for the expenses and charges that would attend such a measure." [*Q.* 1595.]

Reference to the chart clearly shows the outcome of this change of view. The ratio of bullion had risen to peaks of round about 33 per cent. with exemplary regularity during the period 1827–1838, but when the recovery set in after 1839 the Bank was no longer content with this proportion and by February, 1844, it had risen to 48 per cent.

The last of our half-yearly dates for which a one-third ratio applied was the month of February, 1843; by August the ratio had risen to 40.2 per cent. Early in 1843, therefore, the rule was abandoned in practice. No doubt it had been jettisoned in theory some time earlier, but we must be content to place the date of its abandonment between 1840 and 1843.

For the commencing date we may first quote *Horsley Palmer* once more. To the 1832 Committee he stated that:

> "The Bank have not had the power of acting upon any

> fixed principle till a late period, subsequent to the year 1825." [*Q.* 270.]

and pressed later to "name any period at which the proportion of one-third in bullion was preserved", he replied, rather obscurely:

> "Prior to the turn of Exchanges in August 1830, the highest amount of bullion which the Bank possessed was £12,300,000." [*Q.* 325.]

We can, however, find indications that the Bank *wished* to apply the rule rather earlier than this would suggest. Thus, *William Ward* (Director since 1817) answering later a question similar in form but apropos of the period before 1825, said:

> ". . . . they were gradually approximating to that state of things that the Directors of the Bank desired, namely, to have one-third of their liabilities in treasure; and being greatly in excess of that, for the reasons I have stated, they were in the progress to come back to that." [*Q.* 1904.]

This means that the exceptionally high cash ratios of the years 1821 to 1824, which were the result of the Bank's plans to resume cash payments, were regarded as undesirably large. This is confirmed by a later answer given by *J. B. Richards* (Deputy-Governor, 1824–1826, and Governor, 1826–1828):

> "I think in general, since we have been in a state of cash payments, and since we have had the command of bullion, that [i.e., one-third cash ratio] has been generally the principle applying to ordinary times, and when there is no very peculiar distress in the circulation." [*Q.* 4963.]

There is a certain plausibility about the idea, which the two last answers suggest, that the Bank may have devised the rule to guide it when embarking on the resumption of cash payments. Let us bear it in mind as a provisional hypothesis. But much obviously depends upon what the Directors in 1821 believed their obligations to be. It is usual to suppose that their views were embodied in the celebrated Resolution passed on March 25th, 1819, of which one paragraph reads:

> "This Court cannot refrain from adverting to an opinion strongly insisted on by some, that the Bank has only to reduce its issues to obtain a favourable turn in the exchanges, and a consequent influx of the precious

> metals; the Court conceives it to be its duty to declare that it is unable to discover any solid foundation for such a sentiment."

But this has to be interpreted in the light of the evidence given to the 1819 Committee by the Governor and other Directors, since the statements then made were formally adopted by the Court in an earlier paragraph of the same Resolution. And on February 11th and 12th we find that the Governor (*G. Dorrien*) and Deputy-Governor (*C. Pole*) suggested to the Committee that a further £5 millions of Government securities ought to be repaid for the very purpose of enabling the Bank to influence the exchanges. The argument may be pieced out from their answers as follows: If the Government debt was reduced, the commercial demand for accommodation would rise; but not correspondingly, because the Bank's rate of interest[1] was above the market rate. Hence the total of the Bank's issues would fall. This would lead to a favourable turn in the exchanges and an import of bullion, enabling the Bank to increase its gold holdings sufficiently to resume cash payments at some later date.

From this it is clear that what the Resolution actually meant was only that, so long as the Bank's advances to the Government were as high as they were in 1819, the Bank could not favourably affect the exchange-rate. To correct this, the Directors argued, such a contraction of their issues against commercial discounts would have been necessary as would have inflicted insupportable pressure upon the commercial world.

That the Bank was much concerned with the problem of replenishing its gold holding is confirmed by a further paragraph in the same Resolution, which reads as follows:

> "This Court is of opinion, that, in order to secure the re-establishment of a metallic currency, it will be necessary that the bank should not only be provided with a sufficient fund to meet the demands which may be made upon it, with reference to the amount of its notes in circulation, but a supply must also be obtained, nearly if not fully equal to the amount of specie in the country previous to the year 1797."

The concluding phrase refers to the need for gold to replace by coins the small notes which would become illegal two years after Cash Payments were resumed—a point emphasised in evidence before the 1819 Committees by *Jeremiah Harman* (Director, 1794–1827) and others. But the remainder of the paragraph suggests that the Bank had some specific sum in view. Can we ascertain what that was ?

---

[1] To private borrowers 5 per cent.; the Government was charged less.

There is a possible clue in an answer given by *Samuel Thornton* (Director since 1780). In his case the Commons Committee put their usual question in rather a different form. They enquired by how much the Government securities held by the Bank ought to be reduced *on the understanding that they would be replaced by gold.* Thornton replied (February, 24th, 1819) :

> " My opinion is, that the advances of the bank to Government should be reduced one-third of their present amount, with a view to assist the resumption of cash payments."

Similarly in his evidence to the Lords' Committee five days earlier he suggested that the Government Debt should be reduced from £19 millions to £12½ millions, which would set free £6½ millions for the purchase of bullion.

Now we know from the Report of the Commons' 1819 Committee (Appendix 5) that on February 11th the Government Securities had totalled £23,028,820 and from the Report of the 1832 Committee (Appendix 5) that on February 27th the Bullion was £4,184,620 and the total of Notes and Deposits £31,540,070. If one-third of the Government Securities had been replaced by bullion (whether the exact figures or Thornton's own estimate is taken), the cash-ratio would have been raised approximately to one-third of the combined notes and deposits. We cannot, of course, be certain that Thornton, in making this estimate, had any such ratio in mind, especially as he nowhere refers expressly to the cash backing. But so far as it goes his evidence does seem to support our provisional hypothesis.

On the other hand, indications can be found that the conception of a normal cash ratio had arisen even *before* 1819. There is, for example, the testimony of the veteran *Jeremiah Harman*, in 1832. Asked what proportion of bullion the Bank was accustomed to keep, he replied :

> " During the greater part of the time in which I was in the Bank . . . . it was quite impossible for the Bank at all times, and indeed very rarely, to possess so much gold as they would gladly have possessed." [*Q*. 2153.]

> *Q.* "During the time of the restriction . . . . it was of little consequence, of course, what amount of bullion you kept by you?"
>
> *A.* "We should have very gladly kept up the proper proportion of bullion, but it was utterly impossible to do it." [*Q.* 2154.]

Indeed, it is possible to extract something approximating to a "Palmer Rule" from the evidence tendered to the Committee of 1797:

Examination of Daniel Giles (Governor) on 31st March, 1797:

> *Q.* "Do not the Bank Directors regulate their Issues upon discounts by an attention to the proportion of Cash in their coffers and the amount of their outstanding Notes?"
>
> *A.* "They ought to do so and generally do regulate their conduct in consequence."

Examination of Samuel Bosanquet on 14th March, 1797:

> *A.* "It is possible for the Bank to be in a much safer situation, with a much smaller sum in specie when public affairs are prosperous, than with a much larger sum and an apprehension that that sum is draining away."

But was the maximum proportion here envisaged a constant one? And if so, was it one-third? This seems unlikely. It is true that when first the Bank proposed to resume Cash Payments (January–February, 1799) its cash ratio was almost exactly one-third (32 per cent. in August, 1798, rising to 35.9 per cent. on February 28th, 1799). But on the other hand, if this was more than accidental, it was presumably a tradition from pre-Restriction days. And not only is any such specific figure controverted by Bosanquet's evidence quoted above (p. 162), but it is also belied by the statistics for the twenty years before payments were restricted. For the peak ratios in these years were 31.8 per cent., 32.2 per cent., 45.2 per cent., 52.9 per cent. and 41.8 per cent. It would seem that the maximum ratio pursued in this period was varied according to the circumstances of the time.[1]

Before 1778 we have, as previously stated, no figures except those given to the House of Commons in 1696. These were comprised in a single balance-sheet dated November 10th of that year, the Bank's liabilities being £1,975,872 10s. 6d., and its cash only £35,664 1s. 10d. (2 per cent. This was, of course, at a moment of acute difficulty to the Bank). What policy, if any, was pursued in the interval we do not know.

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[1] The evidence of Samuel Hoare in 1797, quoted above (p. 162) suggests that he envisaged a sort of "Palmer Rule" applying to Notes only and having a maximum of 60 per cent. But the actual maximum ratios against Notes in 1778–1797 were 54.5 per cent., 66.3 per cent., 83.2 per cent., 86.3 per cent., and 65.7 per cent., from which it would be very unsafe to infer any such rule.

It is true that the idea of a one-third cash ratio does crop up even in this period, as for instance in the ingenious calculation of *Nicholas Magens*, published in 1753:

> "They [the Bank of England] make a yearly Profit of 220,000 Pounds out of the Money of the People who keep Cash with them . . . . And . . . . I conclude that the Credit-cash in their Hands may amount to 11,000,000; and thereout is employed in Loans to the Government, discounting of Bills and in buying Gold and Silver, 7,333,333⅓ Pounds, which, at three *per Cent.* Interest or Profit, will amount to the above 220,000 Pounds, and remains 3,666,666⅔ in Cash sufficient for Circulation and current Payment." (*The Universal Merchant*, Section 60.)

But though the trend of the chart suggests that his figure of £11 millions may have been somewhere near correct, it does not seem probable that the rest of his argument had much foundation. For only seven years earlier the Bank had taken a course which suggests that they regarded a 10 per cent. ratio as then sufficient. Having agreed in 1746 to advance £1 million to the Exchequer at 4 per cent., they took up only £100,000 in subscriptions from the public, at 6½ per cent., but bound the subscribers by their contracts to furnish each an additional sum equal to nine times their subscriptions in case of need.[1]

In any case, of course, neither Magens' calculations nor the Bank's part-payment plan suggest anything resembling the *fluctuations* in the ratio, below a constant maximum, which were an essential feature of the "Palmer Rule". What therefore are we to conclude about the latter? We must admit that, for sheer lack of information, we cannot exclude the bare possibility of some such tradition guiding the Bank in the eighteenth century; but their actions in 1746 and the ratios attained from 1785 to 1794 suggest that the principles then observed were at least more flexible than those of 1832. We are therefore brought up against the second part of our enquiry: Why was a rigid maximum of 33 per cent. adopted ? When we have discussed this we can return refreshed to the problem of when its adoption took place.

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[1] *The History of the Bank of England* (1797), pp. 15–17.

III

The reason why a one-third ratio was taken to be a desirable maximum may be sought in two different directions. The decision may have been based either on empirical observation or on theoretical analysis. Let us first consider the latter, as being the wider alternative.

There were, as a matter of fact, extremely few references to any specific cash ratio in the literature available for study by the Bank Directors. The earliest writers seem to have taken one-tenth as the right figure; this can be traced back as early as 1676:

> "I suppose people will suddenly come to their wits, and begin to examine why a Goldsmith banker should be better security than another man, or fitter to be trusted for ten times more than he is worth." (*The Mystery of the New-Fashioned Goldsmiths or Bankers, &c.*, by J. R., p. 7.)

It recurs in a second tract, written to answer the former, which bears the fascinating title of *Is not the Hand of Joab in all this ?* Referring to the above quotation, the writer comments :

> "Shall I ask our Author whether this was practized without reason and good experience by those that did it ?" (p. 14.)

In 1832 this tradition was represented by *Vincent Stuckey*, banker in Somerset, who gave evidence that :

> "In ordinary times a reserve of £2 in £20 is amply sufficient." [*Q.* 1113].

There was, however, a second school of thought which regarded such low ratios as inadvisable. This may be illustrated, for the early eighteenth century, by a quotation from the anonymous tract *Proposal for Restoring Credit*, published in 1721 :

> ". . . . those who have had Occasion to make Observations upon the Nature of *Banking*, do Remark, and will needs have it to be a Rule in Banking, that to circulate any quantity of Notes, will require a Summ, to the Amount of a *fifth Part* at least, of the Extent of the Notes circulated." (p. 38.)

The same figure recurs in another anonymous publication, *The Utility of Country Banks Considered*, dated 1802, where the author, after declining to hazard any "precise sum" for a cash ratio, offers two illustrations, one of a 20 per cent. ratio (£400,000 cash out of £2 millions in circulation) (p. 36) and one of 25 per cent. (£20,000 out of £80,000) (p. 41).

On the Continent a still higher ratio was apparently considered advisable. Thus *Butel-Dumont's* book *Traité de la Circulation et du Crédit*, published anonymously at Amsterdam in 1771, contains the following explicit statement:

> "On a toujours cherché à calculer la proportion qu'il doit y avoir entre les espèces courantes et les papiers de crédit; et il y a longtemps qu'on l'avoit fixée comme 3 est à 1, c'est-à-dire qu'il peut y avoir, sans danger, trois fois autant de papier dans la circulation qu'il y a de monnoie . . . . Si l'on veut appeller cela disproportion, ... c'est aller contre l'expérience . . . . (p. 147).

And this also had its followers in 1832, *vide* Evidence of *C. S. Forster*, Banker at Walsall, who said:

> "When I first established the regulation of keeping my reserve entirely in gold, the proportion was about one-third of the amount of my notes in circulation." [But] "that proportion is now less, because we have made an arrangement by which we can always get gold at a very short notice." [*Q.* 1478.]

Another witness, *William Beckett*, Banker at Leeds, went further, keeping a 50 per cent. reserve, in cash and Bank-of-England Notes, against his own circulation. [*Q.* 1361.] But he also stated that his deposits, against which he apparently kept no specific reserve, were more than four times his note-issue [*Q.* 1282], so that his ratio against notes and deposits together was actually less than 10 per cent.

We must be careful, indeed, to recognise that the Bank was virtually exploring new ground in specifically keeping a reserve against both types of liability. This clearly meant that it could not accept ready-made any one of the various ratios offered in the literature, especially as its proportion between Notes and Deposits was different from that of other banks. But it would seem that, if anything, the ratio selected by the Bank might have been *smaller* than the figures elsewhere suggested for a reserve against notes alone: whereas it adopted practically the highest anywhere recommended before 1832. Even though we can establish that the Bank considered itself different from other banks, we have yet to see why it thought so material a difference in reserve to be necessary.

However, the answer is not far to seek. In another section of his evidence in 1832, *Horsley Palmer* expressly stated:

> "The Bank of England, under existing circumstances, appears to be called upon to retain a larger proportion of bullion than it would do, if it had merely to provide for its own circulation." [*Q.* 89.]

Asked to explain this dictum, he continued:

> "I mean that, provided the Bank were not liable to be called upon in the money market of London for a large supply of coin to uphold the country circulation, a less deposit of bullion would be required." [*Q.* 90.]

For such responsibilities there was no guidance to be found in the literature. It is true that different ratios for different kinds of banks had been recommended for a hundred years before, but as the following quotations will show, the type of argument put forward was not helpful to the Bank.

In some the differentiation was based upon the mere size of the Bank, as by the author of *Proposal for Restoring Credit* (1721) which has been previously quoted[1]:

> "A Sum in *Specie* will serve to circulate Notes to a much greater Value; and still as the *Specie* is encreased, it will circulate Notes in a *greater* Proportion: for suppose that *Two Millions* were able . . . to circulate only *Ten Millions* in Notes . . . yet with the Addition of *One Million Specie more* . . . they would be able to circulate . . . *Thirty Millions in Notes* . . . and if more Specie is still supposed, then the Circulation would be yet to a greater Proportion . . ." (p. 12).

In others, upon a separation of function, but not of the kind to interest the Directors. A good example of this is given by *Cantillon*[2]:

> "If a hundred economical gentlemen . . . deposit each one 10,000[3] ounces of Silver with a Goldsmith or Banker . . . . the Banker will often be able to lend 90,000 ounces . . . . and will only need to keep in hand . . . . the tenth part of his deposits . . . .

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[1] P. 172 above. This distinction is also, perhaps, implicit in the different percentages quoted from *Utility of Country Banks Considered* (1802) on page 173.

[2] I am indebted to Professor Hayek for this reference.

[3] So (*dix mille*) in original but apparently an error for 1,000. *Cf.*, Postlethwayt, ***Universal*** *Dictionary* (1751–1774) *s.v.* **Banking**.

> " If 100 individuals . . . deposit with a Banker their income every six months as it is received, and then demand their money back as and when they have need to spend it, the Banker . . . . can hardly lend . . . . more than about one-half of the sums which he owes . . . .
>
> " If those who deposit money with the Banker are Undertakers and Merchants who pay in large Sums daily and soon after draw them out, it will often happen that if the Banker divert more than one-third of his cash he will find himself in difficulties . . . ." (*Essai sur la Nature du Commerce* (1734), pp. 397–403 ; pp. 299–303 in Higgs' edition, here quoted.)

Later writings provide no more help ; it is unnecessary to continue to quote, since no one ventured to prescribe any specific ratio for an institution facing such problems as those encountered by the Bank of England in the 'twenties and 'thirties. Apart from such vague assistance as might be gleaned from the extracts already given, the Bank must have relied upon empirical observation.

It did not even have the assistance of foreign experience. The invaluable *Horsley Palmer* may again be quoted in support of this statement (Evidence before 1832 Committee) :

> *Q*. " Have you any information as to whether that proportion [i.e., one-third] is held, in other Banks in the world, to be the true one or nearly the true one ? "
>
> *A*. " No, I have not '. [*Q*. 88.]

We must therefore conclude that it was the experience of the Bank of England itself which guided the Directors in the formulation of their rule. But how can we recapture the deductions which they must have made from the available figures ?

Once again *Horsley Palmer's* evidence points the way. There were two main reasons why the Bank's cash might be drained out ; adverse exchanges or lack of domestic confidence. If the Bank considered itself responsible for the adequacy of its reserve in both these contingencies, it would have had to keep a maximum ratio larger than the 42 per cent. in 1794, since this had proved unavailing in the panic of 1797. But the Bank's conscience was not so exacting. As its Governor observed :

> [A] " Bank conducted on sound principles should never have to fear a demand for specie for exportation ; but no caution can save it from internal panic." [*Q*. 656.]

It is true that this answer was given in 1832, and that it may reflect post-1825 pessimism rather than the opinion of the Directors at that earlier period when, as we have suggested, they framed their rule. But it seems more likely that the Bank, debating the causes of the cessation of Cash Payments, came to feel that when internal alarm reached such a pitch, no rules could save convertability; and deliberately decided not to reckon, in their calculations, for a possible recurrence of "panic". If that is so our task is simplified; we have only to see what, in the history of the Bank as we know it, suggested one-third as a suitable maximum ratio to guard against loss from an adverse exchange.

IV

But now we have to fall back upon our own resources. Our brick is not yet made, but we have used up all our straw. Before we attempt to give our surmise final shape let us gather up the loose ends we have left behind us.

In 1832, we know, the Bank was working the rule that a one-third cash ratio was the correct maximum, to be attained just before the exchanges became adverse. We have seen that this idea can be traced back with more or less probability to about 1819; but that it is very unlikely to have been current before 1797. What happened in between we do not yet know. On the other hand, we believe that the rule was abandoned somewhere between 1840 and 1843.

As regards the "why" of the rule, we have only negative evidence to help us. There does not seem to be any specific recommendation in English currency literature from which a one-third ratio, to notes and deposits, could have been taken. In any case, the Bank thought it had a specially onerous responsibility, and we have not found any writer who prescribed a ratio for that need. It seems, too, that the Bank had no access to Continental experience to guide it. Hence, in the absence of theoretical beacons, it must have groped its way by reflections from its own past history.

But if this inference is correct it has very considerable significance. The Directors who gave evidence in 1810 were not men, we may safely say, to trouble their heads about desirable maximum cash ratios in the remote contingency of cash payments being resumed. Hear, for example, *J. Pearce*, Deputy Governor, questioned on March 30th, 1810, about the appropriate action for the Bank in the event of its being required to " open " :

> " I cannot say what would be my opinion in such a case ; as that opinion would then be guided by the view that might be taken by the collected sense of the whole direction, arising out of such circumstances as might then prevail."

But five years later the decision had to be made. The Battle of Waterloo must have seemed the end of the War ; whereupon cash payments would soon become legally enforceable. The Bank immediately began to build up its cash resources, and by November, 1816, it thought itself able partially to resume payments, offering to cash £1 and £2 notes issued before 1812. Its reserve ratio was then somewhere between 20 per cent. and 25 per cent. In April, 1817, the ratio being between 25 per cent. and 30 per cent., small notes dated 1812 to 1815 inclusive were made convertible. In August, 1817, the ratio touched 30.5 per cent. and in the following month the Bank undertook to cash notes of all denominations issued before 1817. It is clear that the Directors had some safe ratio in mind, and that as this figure was approached they gradually widened the categories of encashable notes. In so doing they were actually following, though more elaborately, the precedent of 1799 ; and it would seem at least possible that they intended once more to offer unlimited cash payments when the ratio should reach 33⅓ per cent.

Unfortunately we lack final confirmation of the parallel, because in September, 1817, a foreign drain set in and the ratio began to fall again. But the inference that the Directors' maximum figure had been nearly reached is strengthened by the knowledge, which we have already gained, that the 40-odd percentage attained in 1821–24 was considered too high. (Possibly the Court was aware, or assumed, that some such decision had been reached in 1799 about the equally lavish ratios of the period 1785–1794.) On the other hand, the Directors in 1815 had had recent experience with a 25 per cent. ratio (1805–8) which seemed to show that this did not allow enough margin for external emergencies—note the dangerously low figure in August, 1814. They may have argued, therefore, that the desired ratio must lie between 25 per cent. and 45 per cent. ; and a simple average gives near enough to the figure actually announced.

We can thus date the decision to secure a one-third ratio before resumption either to 1799 or independently to 1815; there is no conclusive evidence to decide the point, though we have seen that the later Court may well have been influenced by War-time experience. But even if we believe that the ratio was blindly copied from 1799, the Palmer Rule itself can scarcely be dated before 1815, because we have found no signs whatever that the earlier Governors, either in 1810 or in the 18th Century, had visualised an *unchanging* maximum ratio. It was this distinguishing feature which their successors imprinted upon the conduct of the Bank for the ensuing 25 years.

And once this decision had been made, experience must have seemed more and more to bear it out. Although in 1817 the one-third ratio was not completely attained, the Bank weathered successfully with its help the pressure of 1819. The crisis of 1825 it ignored, because it was clearly due to one of those "internal panics" for which it disclaimed responsibility. But when once, in 1827, the chosen ratio was reached, it seemed to work so well that Horsley Palmer in 1832 could feel justified in relying on it as a sovereign guide. The empirical plan of 1815 had become the reasoned rule of 1832.

NOTES AND SOURCES FOR CHART

BANK OF ENGLAND SECURITIES IN £ MILLIONS

February, 1778, to February, 1844.	Total on last working day in February and August of each year. *Source:* Select Commons Committee on Bank Acts, 1857, Appendix 11. (Reproducing and continuing figures given in 1832 Report, Appendix 5.)

HAMBURGH EXCHANGE, IN FLEMISH SCHILLINGS AND GROTES

February, 1797, to February, 1838.	Quotations on varying days towards the end of February and August in each year. Usance, 2½ months. *Source:* Tooke's *History of Prices*, II, p. 384.
February, 1839, to February, 1844.	Quotations on last Friday in February and August of each year. Usance, 3 months. *Source: Ibid.*, IV, p. 451.

NOTE: Commencing in 1828 the quotations were made in Marks Banco and Schillings. (16 Schillings = 1 Mark. 3 Marks = 8 Flemish Schillings = 96 Grotes.)

CASH AS A PERCENTAGE OF NOTES PLUS DEPOSITS

Source: as for Securities (above), utilising columns headed "Bullion".

A Reconsideration of the Austrian Theory of Industrial Fluctuations

By L. M. Lachmann

I

The Austrian Theory of Industrial Fluctuations has lately been under a cloud.[1] By 1940, its most faithful adherents have to admit to themselves that few of the high hopes it held out in the halcyon days of the early 1930's have been fulfilled. To some extent this is, of course, due to the erstwhile ascendancy of the doctrines of Mr. Keynes and his followers, and although this is but a negative reason, it is probably the one that would readily occur to three out of four present-day economists.

It is probable, however, that to the historian of the future this ascendancy will be less of a problem than it is to some contemporaries of ours. For, when the history of economic thought in the second quarter of the twentieth century comes to be written, it will have become clearer than it is now that Mr. Keynes' theory—so far from being " general " —derives its fascination for the present generation of economists mainly from the fact that it is a most vivid description of a peculiar historical situation, an impressive picture of our world. In this disordered world the institutional and political framework of economic progress has broken down and in the resulting international chaos the capitalistically most advanced countries find it impossible to fulfil their natural function of assisting the economic development of the more backward parts of the world. The economic theorist of sterling purity, who in constructing his models chooses to ignore all this, may then, of course, summarise this situation by speaking of a " lack of investment opportunities " !

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[1] The present paper contains results of an investigation into problems of secondary depressions which the author undertook as Leon Fellow of the University of London during 1939–40.

Reasons more positive—and of less ephemeral value—for the temporary eclipse of the Austrian theory may have to be sought in the manner of its first presentation and the intellectual milieu of its protagonists. Its theoretical pedigree was Wicksellian, and Wicksell's major claim to fame was to have linked the Böhm-Bawerkian theory of capital to the Walrasian equilibrium system. Hence, recent attacks on the former could not but affect its apparent derivative in the field of industrial fluctuations, while the charge of assuming "Full Employment" from the outset appeared no less serious a gravamen to a generation to which the monthly unemployment figures had become an integral part of its acquaintance with economic life.

Of both these charges Professor Hayek has now effectively disposed.[1] And if it could be hoped that the major obstacles to a more general understanding of the theory were thus removed, we might well leave matters at that. The only justification we have to offer for reconsidering the theory in the light of certain of its dynamic aspects consists in that we are unable to entertain any such hopes. For it seems to us that in the discussion about the Austrian theory "The Structure of Production" and "Full Employment" have received an altogether exaggerated attention, and that those who rejected it did so mainly because of its apparently too static character. It is curious to observe how the very same people would then wholeheartedly subscribe to another doctrine which, although at heart far more static than the Austrian, succeeded in conveying a distinctly dynamic impression, with all its static characteristics carefully tucked away.

In spite of this we believe that the reluctance with which the Austrian theory has met so far is actually due less to its being too static than to the fact that the mind of our generation, impregnated with static equilibrium notions, is incapable of realising its real dynamic significance.

In what follows we shall try, first to re-state what to us appear to be the essentials of the Austrian Theory of Industrial Fluctuations, a theory about the effects of cyclical fluctuations on the inter-industrial relationships between prices, profits and real wages. At the end of this paper we shall briefly confront this theoretical construction of ours with whatever knowledge we may be able to glean from trade cycle history in order to test its relevance to different periods of cyclical fluctuations. We hope to show that the Austrian theory is essentially dynamic, and we believe that any appearance to the contrary in its first presentation was really due to the upbringing of its protagonists to whom Walrasian equilibrium conditions appeared as the natural jumping-off ground for all excursions into the real world. We believe it to be vital to a correct understanding of the Austrian theory to stress its dynamic features and, in particular, to point out that certain of its assumptions, which have caused in the past and are likely to continue to cause much misunderstanding and bewilderment, have to be interpreted as symbols of a world of change.

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[1] F. A. von Hayek: *Profits, Interest and Investment*, London, 1939.

That the Austrian theory does not readily fit into a static equilibrium system is easily seen, albeit in a very general and simplified manner, if we bear in mind that while *reversibility* is of the essence of the latter, the Austrian theory rests fundamentally upon the non-reversibility of the investment operation. Once " free Capital " has been converted into buildings and machinery, any failure of events to conform to expectations will upset everything.

We do not revert to our initial position, but are worse off than we would have been had we never departed from it. For all static equilibrium analysis, on the other hand, it is essential that every deviation from the equilibrium point will set in motion forces which will lead us back to this point.

If the foregoing is thought to afford some justification for a reconsideration of the case, there are two special reasons why the present moment appears particularly propitious for this endeavour. On the one hand, the recent publication of Professor Schumpeter's *Business Cycles*[1] will no doubt rekindle interest in the dynamics of the process of capitalistic evolution, and his concept of " Innovation ", as we shall see, provides us with a most valuable tool of analysis. By its help, we shall try to explain the peculiar function of the capital-goods-industries in a world of change. On the other hand, in the new version of the Austrian theory real wages begin to fall at the moment that " Full Employment " is reached.[2]

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[1] J. A. Schumpeter: *Business Cycles*, 2 vols. McGraw-Hill, New York. 1939.

[2] F. A. von Hayek: *Profits, Interest and Investment.* London. 1939. p. 11. The description of the point at which scarcities begin to make themselves felt as one of " Full Employment " seems to us most unfortunate. As will be seen presently, what is meant is Full Capacity (of first-line equipment) rather than Full Employment of Labour. Its theoretical significance consists in that it is the point at which cost curves begin to slope upward.

This result, at first sight rather astonishing, is based on the assumption of an intercyclical increase in the productivity of Labour so that in successive cycles identical output quantities are produced by less and less Labour, and " Full Capacity " may mean considerably less than " Full Employment ". Here again the theory requires dynamic interpretation.

It goes without saying that if in what follows we endeavour to set forth what to us appear to be the essentials of the Austrian theory, we are acting entirely on our own responsibility. As long as thought is free, there is no guarantee whatsoever that, because some men's ideas coincide at some moment, they will do so at the next. By the same token, " schools of thought " lead a precarious life. At best of a transitory nature, they grow and wither as the human spirit moves.

We earnestly believe that what we have to say will be unobjectionable to all who are counted among the Austrian School, but we may well be wrong. We shall try to present the doctrine in such a way as will safeguard it against most of the attacks to which so far it has been exposed, but here we may well fail. In the end the reader will have to judge for himself whether he is able to recognise in our sketch essential features of the world in which we are living.

II

In this and the following sections we shall state our assumptions regarding the structure of the industrial system and the relations between the various factors of production. Thereafter we shall study the cyclical process, i.e. our system in motion, and at the end of the paper make a brief attempt at verification.

In every economic system in which the division of Labour has reached a certain stage it is possible to distinguish :

(1) industries producing consumers' goods,

(2) industries producing the equipment for the production of the former,

(3) industries producing raw materials.

For the sake of brevity we shall speak of C-, E-, and R-industries. But in a progressive economy there will exist a further group of industries, the special function of which is the provision of the means for progress. And in an economy that is liable to change there will have to be industries providing the means for change.

Our first task consists in convincing the reader that Growth is but one aspect of Innovation and that therefore the industries providing the means for both will be identical. There is little we have to add to Professor Schumpeter's brilliant analysis of the problems of industrial change. It is, of course, the fashion to-day to describe all dynamic phenomena in terms of aggregate quantities (like investment, incomes, output) and to regard Growth as an upward movement of a system of variables interpreted as the response of the system to changes in external conditions, say population. As such an attitude is only too prevalent among contemporary economists it is necessary for us to insist that there is no such thing as " natural Growth " and that a casual glance at the economic history of countries like India and China is sufficient to make us understand that industrial Growth is the outcome of conscious and sustained human effort about which " dynamic equations " tell us less than nothing. Growth then is the cumulative effect of individual efforts directed towards the improvement of the productive apparatus of society.

To deny that the results of these efforts can be adequately described in dynamic equations is, however, not the same as to ignore the effects they may have on the structure and composition of the economic system by stimulating some industries while thwarting others. On the contrary, it would be true to say that the Austrian theory is a theory about the inter-industrial effects of certain dynamic processes.

In a progressive economy it is usually possible to discern industries which are particularly sensitive to enterpreneurial efforts towards change and innovation. We might call them " dynamic key industries " and shall refer to them as K-industries. If the reader is satisfied that Growth does not just consist in aggregate quantities sliding harmoniously upwards along an imaginary " trend ", he will have made the first step towards understanding why the demand for the products of these industries is unlikely to be closely geared to that for consumers' goods.

Our next step consists in showing that " capital-intensification " or the " deepening of capital " is merely another form of Innovation. Once we have rid ourselves of the notion of capital as a homogeneous aggregate and bear in mind its essentially heterogeneous character as an agglomeration of houses, ships, machinery, etc., it is easy to see that "an increase of capital per unit of output" does not just mean the addition of another piece of machinery to an otherwise unchanged equipment park, but that as often as not it will entail a complete re-arrangement of the existing productive apparatus, including depreciation of specific factors, and possibly a change in the character of the final product. This is but another way of saying that the "deepening of capital" is a non-reversible process by which the conditions of production are definitely changed.

For our purpose what matters is that the industries which in a progressive economy provide the means for capital-intensification are identical with those providing the means for changes in production in general (i.e. under modern conditions the "heavy" industries producing iron and steel). In economic history, as a matter of fact, it is often virtually impossible to distinguish between the one and the other: the evolution of the railways can be described either as the production of an entirely new service or else as capital-intensification of the pre-existing transport system. The same applies to electrification.

III

Furthermore, we shall assume that labour in each of the industries described above is homogeneous—which does not, however, exclude differences between average and marginal product where homogeneous labour co-operates with equipment of different quality—but that it is not mobile between industries. In other words, labour in each industry is a non-competing group.

Furthermore, we are assuming a fairly rapid intercyclical increase in the productivity of labour as a result of technical progress. Thus we shall expect to see in successive cycles physically identical output quantities produced either by a steadily diminishing labour force or in shorter working weeks or by a combination of both.

Let us now analyse our system in terms of complementarity and competitiveness. Broadly speaking, consumers' goods industries (C), equipment goods industries (E), and raw material producers (R) are complementary in the sense that, on the whole, a change in demand for C will entail a corresponding change in demand for the other two. As to our dynamic key-industries (K), they certainly compete for raw materials with C and E. But what determines the demand for K-products ? Is K-output complementary to or competitive with the output of C and E ? It is impossible to answer this question straight away, yet it is on this answer, as we shall see, that the issue between the Austrians and their opponents ultimately turns.

There is no prima facie reason for a belief that demand for the products of our K-industries must be closely linked to that for consumption goods. It is true that these industries are partly engaged in building up new C-industries, but just because the latter are new, their demand schedules are unknown and it is in no way possible to deduce such schedules for particular industries from any general demand function. Demand for K-products depends thus largely on expectations regarding a distant, unknown and uncertain future. We only know two factors which are most likely to have a decisive influence on it :

> (1) The relationship between present costs and expected future yield. " The rate of interest relates a future income stream to a present capital outlay. With a given rate of interest, the investor's decision depends on the cost of this present outlay and the size of the expected future income stream, i.e. he has to compare a present outlay exclusively determined by the present level of costs and prices with an expected income stream which . . . is unlikely to be affected by this at all. It follows that, in the case of durable investment, the average yield of which is independent of present conditions, a rise in costs will check the inducement to invest and vice versa."[1]
>
> In referring to this factor we shall speak of the *Lundberg effect.*[2]
>
> (2) Real Wages. By the real wage paid in an industry we mean the ratio between money wage and price of the product of the industry. Real wages in different industries may hence be expected to be different. The higher the

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[1] L. M. Lachmann, " Investment and Costs of Production." *American Economic Review*, XXVIII (1938), p. 475.

[2] Erik Lundberg : *Studies in the Theory of Economic Expansion* (Stockholm Economic Series, 1937), p. 230. Dr. Lundberg, it is true, relates receipts to the rate of interest only. But, as the present author has shown (*l. c.*, p. 475), it is easy to extend the theorem so as to cover costs other than interest.

real wage in an industry the stronger is the urge to substitute labour-saving machinery and to increase the amount of capital per unit of output. Equally, where real wages are low, they will set up a tendency to diminish the amount of capital per unit of output and to turn over capital more quickly. In referring to this factor we shall speak of the *Ricardo effect*.[1]

From all this it follows that if our two factors were moving together, if real wages were to increase at the same time that investment costs rise relatively to future yields, this would tend to stabilise our system. For it would mean that while one source of demand for capital goods which is particularly sensitive to the cost-yield ratio became exhausted, another one—demand for labour-saving machinery—would help to maintain the level of investment activity. This is what, prima facie, we should expect to happen during the later stages of prosperity: While raw material prices soar and their forward quotations begin to display ominous "backwardations", will not the point of Full Employment be approached? Unfortunately, in our economic system this is unlikely to be the case owing to the intercyclical increase of the productivity of labour. There is no reason to believe that in an economy such as ours the introduction of labour-saving machinery has to wait for Full Employment to become profitable. Moreover, inspection of British and American statistics for the 1920's and 1930's suggests considerable increases in the productivity of Labour at considerably less than Full Employment.[2] In this case, unless there has been a corresponding increase in equipment, Full Capacity will be reached before Full Employment. Hence, real wages will begin to fall at exactly the moment that the boom gets under way, and the Ricardo effect will come into play. As the percentage of profit per unit of output rises, it will pay to turn over capital more quickly rather than to invest it for longer periods. Hence, the dynamic relationship between real wages and the cost-yield ratio typical of our world has a strong destabilising effect on investment. And it is rather cold comfort for us to learn that once the system has slid into the phase of recession the improvement in the cost-yield ratio as well as the rise in real wages will both come to our help and tend to arrest the downward process. By 1940 we have all learned that an " elastic " monetary system is likely to engender forces which, once our mechanism is set on its downward course, are apt to push it further and further.

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[1] F. A. von Hayek: *Profits, Interest and Investment*, pp. 8–10.

[2] For Great Britain:

G. L. Schwartz and E. C. Rhodes: *Output, Employment and Wages in the United Kingdom*, 1924, 1930, 1935. (London and Cambridge Economic Service, Special Memorandum No. 47). See in particular the Introduction by Professor A. L. Bowley.

For the United States:

D. Weintraub: *Technological Trends and National Policy* (National Resources Committee, Washington, 1937).

The cyclical effect on employment of the intercyclical increase in the productivity of labour will, however, be modified to the extent to which an increase in equipment and output will absorb unemployed. Now, statistical evidence goes to show that years of rapid increase in the productivity of labour are usually also years of heavy capital accumulation. Yet, for several reasons it must appear very doubtful whether such investment can actually have a compensatory effect on unemployment. In this context it is of utmost importance to realise that not *all* investment, but only *some* investment, can have such mitigating effects.

First, even where the increase in the productivity of labour is merely the outcome of capital intensification[1] in the " classical " sense, i.e. an increase in capital per unit of output which leaves the existing productive apparatus unaffected, as much new capital as is necessary in order to produce the same output with less labour can have no compensatory effect on unemployment. Only investment in excess of this quantity can have such an effect.

Secondly, in most cases the increase in the productivity of labour is, of course, due to " technical progress ", with or without a change in the ratio between capital and output. In this case new investment will be necessary in order to replace the whole set of existing machinery, unless the new equipment is only gradually introduced as the old wears out. But this piecemeal procedure is unlikely to be adopted, partly for economic reasons—because each entrepreneur will strive to be the first in the field—and partly for technical reasons—since a rationalisation plan is an integrated whole that cannot be carried out piecemeal.

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[1] The reader will notice that we distinguish between the cyclical and intercyclical aspects of capital intensification. To the former belongs its effect on investment, employment and incomes in K, to the latter its effect on employment in C. In Dr. Hawtrey's terminology, while the effects of capital *being* deepened are confined to the Cycle (" The Short Period ") those of capital *having been* deepened extend over a longer period of time. It is only with the latter that we are here concerned.

We may therefore conclude that in the case of "technical progress" only investment beyond the magnitude necessary for the replacement of the existing machinery will be capable of mitigating unemployment.

Third, if in such cases for the reasons just mentioned it is not possible to wait for the existing equipment to wear out before new equipment is installed, it follows that such innovations are bound to leave a backlog of unutilised old equipment to fall back upon—if at higher unit cost—in cases of emergency. Hence, the very fact of a change in the method of production will entail an increase in the capacity to produce output. Every increase in capacity capable of absorbing unemployed would again have to be in excess of this magnitude.

We thus may conclude that from whatever point of view we are looking at our problem, the chances of an early mitigation of technological unemployment must appear to be slender.

IV

Having hitherto studied the elements of our system and the relationships between them, we are now ready to tackle our main task. The stage is set for "The Trade Cycle" to be performed.

Let us assume that in a situation, which cyclically is one of Depression with Unemployment, idle equipment and surplus stocks, an entrepreneur decides to carry out some "Innovation". This is as likely as not to happen in depressions. On the cost side low money wages and costs of building materials will be favourable factors, and on the receipts side we know that the man who plans far ahead cannot take account of cyclical situations, but has to calculate some long run average yield. Whether his innovation be a new consumption good (for which no present demand schedule exists) or an improved method of producing an already existing good (where he is as likely as not to revolutionise the whole market), economic activity devoted to innovation is apt to be but loosely linked to present consumers' demand.

Such entrepreneurial decisions involve increased investment activity, more employment in K-industries and more demand for C-goods. The next step is that C-industries, which probably so far were unwilling or financially unable to replace their equipment as replacements fell due, will make up for arrears. The delayed replacements will have the same effects on E as an increase in investment; larger orders for E-firms, more employment in E and, hence, increased demand for C-goods. Thus a cumulative process of expansion, once the impact effect has come from K, will begin to work between C and E in a shuttle-like fashion.

It is of some interest to note the relative effects which the upward process is likely to have on E and K. At a first glance it would seem that to the extent to which firms in C are replacing obsolete equipment by other which is more "capital intensive", demand will be deflected from E to K. But, first, even where this is the case, it will not interfere with the working of our process, since any increase in activity in either E or K is investment activity in the sense that it sets the "Multiplier" rolling. In the second place, it is quite unnecessary to assume that K and E are competitive to such a degree that any increase in demand for one spells a fall in demand for the other. The introduction of labour-saving machinery will, of course, give rise to a demand for steel products which otherwise would not have come forward, partly because this is what "an increase in capital per unit of output" means and partly because it is hardly possible that a programme of capital intensification could be realised as gradually as equipment becomes obsolete by age. (In practice, as we pointed out above, every change in methods of production leaves a backlog of unutilised old equipment which, although at peak levels of business one may have to fall back on it, suffers intermittent loss of its capital character.) We must always bear in mind that demand for machinery is produced by capital intensification and that, where firms in C change methods of production, this may, of course, raise awkward problems of adjustment in E; but, on the whole, it means demand for a different type of equipment and not no demand for equipment. In other words, where ordinary replacement means demand for E-products, capital intensification means demand for E- *and* K-products. This holds true whether the initial impact on our system came from a programme of capital intensification, or whether, the *primum agens* being some other type of innovation, capital intensification is "induced" and takes place by way of replacing obsolete equipment in C. As long as there are ample surplus resources all over the system K and E need not be competitive and may even become complementary.

V

As the process of expansion gets under way, with employment, incomes and consumption all rising *pari passu*, a stage is gradually approached where our K-industries will become competitive with C and E. To indicate this point in that general and abstract manner which is all of which economic theory—at least at our present level of abstraction—is capable, suffice it to say that some resources which enter the output of more than one industrial group must have become scarce.

Why this should have to be a point of " Full Employment " it is difficult to see, unless one either assumes a short-run variability of the coefficients of production which is little short of miraculous or can show reasons why, if this point is reached, labour should be scarcer than equipment. If, however, our account of the intercyclical increase in the productivity of labour is accepted, it will be the other way round : full capacity of (new) equipment will be attained while there is still unemployed labour. It does not, however, follow from our assumptions that, this point being reached, it is *physically* impossible to increase the output of consumption goods. This, of course, will always be possible, if we fall back on antiquated equipment. If, as we pointed out above, the new machinery has not been installed gradually by replacing old equipment, but at one stroke, such a reserve park of obsolete machinery for intermittent use at peak levels of production must exist. What matters to us is that as this less efficient equipment is taken into use again, the marginal product of labour will fall below its average product. Prices will rise and so will profits, while real wages will fall.

We know that a diminution of the stocks of industrial raw materials is a characteristic feature of the upswing.[1] As soon as this phenomenon makes itself felt and raw material prices begin to rise, our K-industries will come under fire from two sides. The combined Lundberg- and

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[1] L. M. Lachmann and F. Snapper : " Commodity Stocks in the Trade Cycle," ECONOMICA, Nov., 1938, pp. 445–6.

Ricardo effects will now come into play. For, while in C and E, with the strong pressure of demand for consumption goods, the higher cost of raw materials is easily borne, for K this is by no means so.

We know that for the people on whose demand activity in K mainly depends the higher cost of investment is not offset by a higher price of the product they are selling, as this product mostly belongs to the future. Thus, as the boom is getting under way with prices soaring, there is a weakening of the stimulus to genuine innovation, as distinct from speculation—which by adopting the outer trappings of innovation has only too often snared economic historians and financial journalists alike.

The Ricardo effect, on the other hand, accounts for the simultaneous decline in capital intensification and the increase in all kinds of speculative activity. Little though we know about the cyclical behaviour of stocks of consumers' goods, it seems fairly obvious that if the rate of profit is high, business men will try to turn over their capital as often as they can in the profitable present. They will neglect long-term investment—which means forgoing present profit opportunities for the sake of an uncertain future—and devote themselves to profitable short run operations instead. In an economy without a capital market, where every firm would entirely depend on its own resources without being able either to borrow or to lend, business men would now tend to devote their savings and the amortisation quotas of their fixed capital to reinforcing their circulating capital. In an economy with a fully developed capital market demand for the financing of speculative holdings of commodities and securities will now come to compete with the demand for the finance of innovation and capital intensification. Given the high profitability of the former with rising prices and the declining profitability of the latter because of the Lundberg effect, there can be little doubt what the outcome will be and what type of demand will become extramarginal.

VI

We have thus far endeavoured to present the bare outlines of what to us appears as the main contents of the Austrian Theory of Industrial Fluctuations, up to the preceding paragraph at least, " in real terms ". But as we have already had to bring in the capital market in order to explain the working of the Ricardo effect in an exchange economy, we may just as well go one step further and examine, from the level of insight thus far gained, the cyclical consequences of a "Cheap Money policy".

It appears that, whatever the merits of such a policy in depression or during the early stages of revival, there is one aim it cannot achieve: to maintain the level of investment activity under boom conditions. It may seem that by such a policy we are able to facilitate the financing of long term investment. But, under conditions of scarcity of resources and with rising profits, by holding out the prospect of higher prices we shall add to the bargaining strength of those who seek finance for short term operations, and who compete with long term investors for raw materials. The bargaining position of prospective long-term investors would thus not really improve. Moreover, unless such a policy is also capable of affecting expectations of future yields—for this the elasticity of expectations would have to be unity or more—it cannot but have a detrimental effect on the cost-yield calculations of those entrepreneurs on whom, as we saw, activity in K largely depends. While, as soon as marginal costs in C begin to rise, such a policy is bound to encourage the piling up of stocks of consumable goods—the intertemporal transfer of goods from points of lower to points of higher marginal cost—and other speculative operations of a similar kind at the expense of investment in equipment. Thus real wages will be depressed even further. Nor may we pin our hopes on E to offset the decline of activity in K. Even if marginal costs in E should rise less steeply than in C, E will hardly be able to rescue us from our dilemma. This industry is devoted to the replacement of outworn equipment, and, to a certain extent, to the "linear" extension of existing equipment in C. Hence, all production in E is "gross investment". But, precisely for this reason, every order C gives to E involves the tying up of capital which, under boom conditions, can be employed far more profitably in uses which will yield a quick return. We may thus conclude that, where there are scarce resources, no monetary device will overcome the consequences of the simple fact that the economy as a whole cannot have its cake and eat it.

Before concluding this section we may add a few remarks about the consequences to which our theory leads as to wages and wage policies. This would seem all the more propitious, since it is exactly in this connection that the oddest of misunderstandings arose. By some of its less charitable critics the theory has almost been decried as a " gospel of low wages ".

Now, the first point to be noted in this connection is that the theory, not being of the " macrodynamic " variety, can say nothing about such abstract aggregates as " The Wage Level ". It is obvious, indeed, that a doctrine which derives its significance from the fact that different elements of the economic system are competitive rather than complementary, will have to rely on *differential wage movements* in the different parts of the system.

In C and its ancillary industries changes in the wage unit will, as long as the higher (or lower) wage incomes are wholly spent (or economised) on consumers' goods, not affect the rate of profit, which depends on the ratio of marginal to average cost. Wages in K, since their present and expected future level affects the cost-yield-calculations of our " innovators ", are of cyclical importance and have much the same effects as changes in raw material prices. To this extent it is correct to say that *relative* money wage levels in K and C determine the inducement to invest. But it is not true to say that the Austrian Theory, in order to bring about adjustment after the crisis, advocates a *general* reduction of wages. On the contrary, it is to a *rise of real wages* in C that we have to pin our main hope. For, as consumers' demand declines, real wages will, for the reasons known, rise, unless money wages in C are extremely flexible. And if this rise goes far enough, we may hope it will give a stimulus to renewed capital intensification. On the other hand, a fall in money wage rates in K will, like a fall in raw material prices, reduce the cost of investment and thus improve the cost-yield basis of long-term investment. Thus the Austrian theory does, partly, rely on a stimulus to investment engendered by a fall in wages in cost-sensitive industries (K). But a reduction of money wages in C would only render the situation more difficult, as what matters here is the fall in prices *relatively* to wages. If money wages in C fall, prices will have to fall the more before we can hope for recovery.

VII

We now have to confront our last task in this paper. We shall make a brief attempt to test our theoretical model in the light of historical facts. Needless to say, within the space at our disposal it would be quite impossible to run the whole course of trade cycle history in order to find out whether the Austrian theory " fits the facts ". All we can do here is to venture a few very general, and necessarily vague, remarks on the verifiability of our theory. Our conclusions will be seen to contain nothing startling and will possibly disappoint readers who cling to a belief in the infallibility of time series.

It seems to us that, broadly speaking, the Austrian theory when confronted with evidence gathered from nineteenth century fluctuations, comes out very well indeed. We now have Professor Schumpeter's excellent testimony as to the course of American events in the twenties and thirties of last century,[1] and we see no difficulty in interpreting most of the business fluctuations which accompanied the construction of railroads on both sides of the Atlantic in terms of our model. If we learn that the inability of railway share subscribers to pay the full amount of their instalments was one of the outstanding features of the British crisis of 1847,[2] what else does it mean but that railway promoters had grossly overrated consumers' willingness and ability to save and that, in real terms, more resources had been devoted to long-term investment than consumers' preferences would warrant ? If, as Professor Schumpeter points out,[3] American railroad promoters, confronted with the same dilemma, were " in every major instance " only rescued by the timely arrival of European--mostly English—capital, what else can we infer but that the mobile resources of the American economy—raw materials and consumption goods —were insufficient to carry the burden of as large an investment activity as the railroad plans involved, and that a large rise in imports from Europe was needed in order to bridge the gap ? Moreover, whatever price and commodity stock data we have for the period seem to indicate that, in every major instance of a breakdown, scarcity of resources (industrial raw materials) did actually exist.[1]

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[1] J. A. Schumpeter : *Business Cycles*, 2 vols. New York. 1939. Vol. I, p. 296, footnote.

[2] E. V. Morgan : " Railway Investment, Bank of England Policy and Interest Rates, 1844–48," *Economic History*, February, 1940, pp. 331–34.

[3] J. A. Schumpeter, *op. cit.*, p. 335.

But we must admit that as an explanation of the crisis of 1929 and of the developments leading up to it our model does not fare so well. To all our knowledge there is no evidence to suggest that the economic evolution of the 1920's was stopped short by scarcity of resources. We shall not dwell upon the continued existence, in Britain and the United States, of unemployment throughout this period, for, as was shown above, where industrial productivity increases rapidly, unemployment is not inconsistent with a strain on resources (the combination of labour with equipment under conditions of non-optimum cost). More important as a symptom of the absence of any such strain is, of course, the stationary behaviour of consumption goods prices between 1924 and 1929. But what we should regard as most significant in this connection, since it stands in open contradiction to all our other experience, is the increase in raw material stocks after 1925.[2]

It is thus not easy to account for the crisis of 1929 by the help of the Austrian theory. We may infer that the economic conditions of the 1920's must have been very different from those on which our model is based. It is hardly possible for us, in this context, to go beyond the stage of tentative suggestion. All we can do is to hint at two facts which appear to us to be germane to the issue.

First, the evolution of the automobile has changed the economic function of the "heavy" metal industries. In the ages of railroad construction and electrification the cyclical position of these industries corresponded, more or less, to that of our K-industries. Demand for their products was not geared to that for consumers' goods, and a sufficient degree of competitiveness existed within the system. The evolution of the automobile, the demand for which is so largely dependent on consumers' incomes,[3] has changed this. Thanks to it, the iron and steel industries have to-day adopted the character of E-industries in the sense of our model.

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[1] L. M. Lachmann and F. Snapper: "Commodity Stocks in the Trade Cycle," ECONOMICA, November, 1938, p. 436, Table I.

[2] L. M. Lachmann and F. Snapper, *op. cit.*, p. 437, Table II.

[3] *The Dynamics of Automobile Demand*, published by General Motors Corporation, New York, 1939.

Second, where much of the investment activity of the upswing is directed towards increasing the production and productivity of raw materials, there need be no scarcity of them. There can be little doubt that between 1920 and 1930 the production of most industrial raw materials underwent revolutionary innovations,[1] mostly of the capital intensification kind (e.g. tin dredging and the selective flotation process for copper and zinc) and that the rise in raw material stocks was largely consequent upon these changes in productive technique. An industrial society which increases the output of industrial raw materials and lays in a handsome stock of them *before* setting itself to the task of making available more and better consumption goods is acting as prudently as an agricultural community which will not release half of its labour force for the construction of a bridge before a stock of grain which is sufficient to maintain them during their absence from primary production has been piled up

We are inclined to think that such a society would, indeed, be relatively immune against the type of crisis that has been sketched out in this paper. Yet, as we had to learn to our grief, not even such prudence will protect us from other calamities of a dynamic world. The extreme complexity of such a world in which almost any constellation of circumstances is capable, without notice, of giving rise to destructive forces, defies all facile generalisations. What chances of success under the circumstances all attempts at " social planning " that are based on such facile generalisations are likely to have is one of the melancholy reflections which, by 1940, the student of economics cannot eschew.

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[1] Melvin T. Copeland : *A Raw Commodity Revolution.* Harvard Business Research Studies, Nr. 19.

Book Reviews

The Economic Causes of War. By LIONEL ROBBINS. Jonathan Cape. 1939. 124 pp. 5s.

The title of this book suggests that Professor Robbins is concerned to estimate the importance of the alleged economic causes, but in fact—and his work is none the less useful on that account—his more important objective is to establish the conclusion that " it is the chaos of independent sovereignties which is the ultimate condition of international conflicts ". To some extent he disarms critics who might like a more exhaustive examination of some of the economic theories of war causation by disclaiming beforehand any pretension to have produced " a full-blown treatise ", and it is much to be desired that those who may not be fully convinced by all his critical analysis of other people's views should ponder carefully his own more positive analysis, which without doubt goes to the heart of much that has been both important and obscure in recent history. There has been much confusion in popular discussions of this subject merely on account of ambiguity in the use of terms, and readers of this book will more readily in the future avoid the errors engendered by such ambiguity.

Professor Robbins first criticises directly the theory that all important international frictions are due to the existence of the capitalist form of society, showing incidentally that it is not easy to discover a statement of this theory to which all of its adherents will subscribe. He deals in more detail with the underconsumption form of the theory, associated for English readers mainly with the name of J. A. Hobson, and the Leninist theory which presents war as the inevitable outcome of the struggle of capitalists to avert the secular tendency to a falling rate of profit. It is to be feared that this analysis may not be entirely convincing to ardent devotees of either school, for limitations of space compel a high degree of selectivity in dealing with details. We are, in effect, urged to study and absorb the conclusions of Staley and others who have handled this theme, and no doubt both Hobsonians and Leninites would do well to act upon this advice, especially if in so doing the difficulties of interpreting the present conflict in terms of either theory were forcibly impressed upon their attention. It is scarcely possible seriously to maintain that the expansive policies of Germany, Italy or Japan in recent years have been motivated by any eagerness to find outlets for superfluous capital which could not be invested advantageously at home, while such fears of the secular tendency to falling profits which may have afflicted the mind of the British capitalist made the idea of appeasement much more attractive to him than the idea of war.

The capitalist himself, who might be disposed to welcome warmly the certificate of good conduct which seems to be offered to him in the early sections of this book, should however postpone any rash expressions of complacency until he has read Chapter IV, where Professor Robbins develops his own ideas of the economic causes of war. According to him, the truth is the exact opposite of the Marxian thesis that the institutions of the market tend inevitably to breed international conflict, a much more fertile soil for that deadly crop being provided by the efforts of vested interests (capitalist and others) to resist the indications given by market movements, and to practise restrictionist policies for the benefit of their own sectional interests. The obvious connection between recent Japanese policy and the almost world-wide restrictions on the sale of Japanese exports is a clear case in point. As Professor Robbins observes, this may have little bearing on our views of the justice of the Japanese attack on China, but, it may be added, it is highly relevant to our judgment of the restrictionists who apparently are not altogether sorry to see Japan headed off in that direction. " The *raison d'être* of the struggle for national power, in so far as it is economic in origin, is fear of other nations' restrictions," and it is because the machinery of sovereign national states is so easily adapted to the use of those who wish to make restrictionist policies effective that sovereignty must be regarded as the enemy upon whom our fire should be concentrated.

The task of exploring all the repercussions, direct and indirect, of the efforts of vested interests of all kinds to ensure stability for themselves, without considering whether such efforts do not entirely destroy the chances of stability for other people, is without doubt of the greatest importance, and Professor Robbins' contribution merits the closest attention, not least from those who do not share his general point of view on practical economic policy. In a more exhaustive analysis, something more might be said of the attractions which colonial empires have, both for the " haves " and the " have-nots ", as offering opportunities for lucrative employment in governmental or semi-governmental service, a point of view which is also probably not without influence in the minds of those who urge that the migration which was suitable to the 19th century should also be continued in the 20th century, when what they really mean is that migration will be a convenient method for removing inconvenient competitors who, if they stayed at home, might encroach upon the traditional privileges of others.

No serious thinker now pretends that a simple answer can be found for the question of the causation of war. But especially when the problem has such a pressing urgency, it is clearly important to determine the field within which early action for the prevention of future wars is most to be desired. Those who are already sympathetic with Professor Robbins' interpretation of international relations will not find the force of his analysis in any way diminished when they observe that much of the attack on the ideas which he is most concerned to propagate comes from people who, consciously or unconsciously, are strongly influenced by just those vested interests which find the framework of the national state such a convenient instrument in building for themselves a structure which will protect them from the pressure of unpleasant market movements.

ALLAN G. B. FISHER.

The Theory of Idle Resources. By W. H. HUTT. Jonathan Cape. 1939. 193 pp. 6s.

" For the promotion of the material welfare of a people few things can be more useful than patient inquiry into the actual meaning of terms like wealth, income, capital, rent, wages, profits, when used in common language by ordinary people. As soon as ambiguities and inconsistencies are commonly perceived, language may be trusted to find some way of ridding itself of them without the assistance of formal definitions." Thus wrote Edwin Cannan in his article on " Definitions " in *Palgrave's Dictionary of Political Economy.* Professor Hutt, whose appendix to the first chapter of his book reveals his acquaintance with Cannan's article, has with most commendable patience set himself to sort out the different concepts which lurk under the name of Idleness, and has very usefully displayed to us how essentially different they are. His essay ought to be widely read. It will help to clear the minds of students and of policy-makers. Moreover, it ought to be read without delay, and referred to continually by anyone who feels he has reached the age at which he has to keep on learning the same lesson over and over again. For there is a widespread and growing determination to seek out the idle resources in our economic system and to set them to work; a determination which is surely praiseworthy so long as we recognise idleness when we see it, and in our anxiety to abolish it do not confuse with it many other things which it is even more vital to preserve.

Professor Hutt draws his distinctions, for the most part, with an admirable combination of clarity and subtlety. In these days of much confused thinking and writing about surplus capacity, his emphasis upon the service of ' availability ' continuously rendered by a wide range of apparently idle capital goods—those in " pseudo-idleness "—is particularly timely. So also are his strictures upon policies designed to bring back obsolete and other " valueless " resources into use. He succeeds in distinguishing several other conditions, " preferred idleness ", " participating idleness ", " enforced idleness ", and " aggressive idleness ", and also " withheld capacity ", all of which present peculiar problems which demand different treatment. Readers may dislike Huttian terminology, and decline to adopt it all, but they will surely recognise the importance of many of the distinctions drawn. May they prove as fruitful in their influence on future work as were the Robertsonian brands of Lacking and Dislacking, Splashing and Stinting placed upon the market fourteen years ago.

The exposition is not invariably satisfying. " If equipment has no positive net scrap value *and* no immediate hire value, whilst it still has capital value, it must be regarded as *temporarily valueless* " (p. 47) ; but presumably the capital value reflects a positive present discounted value of future revenue expectations ? Again, on pages 63 and 74, " availability is a form of specialization," and " the loss of availability is a particular case of loss of specialization " ; but where the resources in question are deliberately kept in the form of " liquid balances ", in order to enhance their availability, insistence on their *specialized* character is likely to confuse rather than aid understanding. Professor Hutt, when he warms up to the subject of monopoly in the medical profession, is surely less than fair to the Universities (p. 120). When he writes of the " vested interests on the part of teaching institutions which can collect a tax for the privilege of competing for entry to the profession " he ought surely at the same time to make it clear that there can be few if any Universities which do not heavily subsidize their medical courses, most of them probably allocating a more than proportionate share of their non-fee income to maintenance of their medical schools. Finally, if towards the end of the essay one feels the discussion has become tedious, the explanation may be that Professor Hutt's insistence upon the letter of his definitions has on occasion been at variance with their spirit. " Enforced idleness must be distinguished from other forms of ' waste ' : (*i*) specialized ' diverted resources ' which happen to find inferior employments, and (*ii*) the hypothetical resources which might have become specialized in the monopolized field but for the powers of exclusion " (p. 139) ; but an African native of superior capacity might understandably and, surely, rightly feel he is ' idling ' away his life, though " fully employed ", when compelled to spend all his time upon menial and trivial tasks.

On page 42, David Hume is alleged to have " pointed out in 1777 ", the year after he died, an important principle which he published in fact in 1751.

ARNOLD PLANT.

Government and Economic Life. Development and Current Issues of Economic Policy. Volume I. By LEVERETT S. LYON, MYRON W. WATKINS and VICTOR ABRAMSON, of the Brookings Institution, Washington, D.C. Faber & Faber. 1940. xi + 519 pp. 15s.

A rare combination of analytical and interpretive skill and of exceptionally able writing has produced in this first volume a far more satisfying study than most of us would expect a research institution to succeed in evoking from a team of authors upon so ambitious a plan. Messrs. Lyon, Watkins and Abramson are to be congratulated upon a notable achievement, which raises great expectations concerning the volume still to come.

The authors have set themselves the task of appraising the use which the American people have made of government agencies both to produce goods and services directly and to aid and regulate private enterprise. The study of direct production of goods and services by government bodies is reserved till later: the present volume is devoted to a consideration of the use of government to aid and regulate private enterprise.

The aiding or implementation of private enterprise comprises on the one hand the creation and maintenance of social institutions, such as rights over property, the definition of business organisations and the obligations, the provision of patent rights, the establishment of a monetary mechanism, and of a mechanism for adjusting labour disputes. On the other hand government is employed to provide information in order " to enlarge the social effectiveness of individual decision ", and to establish standards. Each of these functions of government (with the notable and highly regrettable exception of " the creation and maintenance of the right to own and alienate private property " and the law of contract) is made the subject of a chapter. Especially admirable is the discussion of the monetary mechanism, in which the authors acknowledge the assistance of Charles O. Hardy. The taxing functions of government are deliberately excluded from the discussion.

The second half of the volume is concerned with the regulation of private enterprise. A brilliant survey of regulations designed to secure the maintenance of competition is followed by a discussion of measures calculated to establish the plane of competition (setting up and enforcing ethical standards of competitive conduct). Two parallel sections, which are devoted to the part played by the government in America in the matter of concerted action by workers, and the regulation of the terms and conditions of employment, are perhaps less successful than the others in presenting a clear picture of the present situation, possibly because the implications of monopolistic behaviour are not so frankly analysed where the sale of labour services, rather than the sale of goods, is under review. Mr. Watkins is specifically absolved from any share in the responsibility for the labour chapters.

The authors wisely avoid, in a volume of these dimensions, any attempt at a comprehensive discussion of the consequences that might presumably follow the various alternative lines of action in each field, nor do they attempt an interpretative account or explanation of the various objectives which are held by different groups. It is not their business, therefore, to propose solutions, or to advocate what they might consider to be " sound " policy. They do, however, classify proposals for reform, and provide a most helpful and extensive series of bibliographical references. The volume will serve admirably as a University textbook.

An English reviewer may be forgiven for regretting a certain insularity in the treatment of American problems by these American authors. The problems are theirs, and they no doubt know all the answers, but they have not enjoyed, or suffered, the whole of the relevant experience.

ARNOLD PLANT.

Price Control under Fair Trade Legislation. By EWALD T. GRETHER. New York: Oxford University Press. 1939. x + 517 pp. $5.00.

Since 1930 America has seen a spate of legislation affecting the maintenance of resale prices. The trade practices by which the retail prices of proprietary articles are effectively fixed have in large measure been legalized, so that a great change in the marketing arrangements for this class of merchandise is in train. The British observer is struck as much by contrasts as by resemblances between the alignment of business interests over this question in the two countries. In Great Britain, manufacturers have taken a leading part in promoting and organising the elaborate machinery by which retailers' gross margins are made rigid. For instance, the leading manufacturers of cigarettes and of motor-cars have been among the most active. In America, the pace has been forced by strong organisations of retailers, and forced often against the resistance of a generally indifferent if not hostile body of manufacturers. There, the leading manufacturers of cigarettes invite and even abet price-cutting, believing that retailers are compelled by the manufacturers' advertising to go on stocking their brands, so that lower retail prices really mean larger sales. Automobile producers also do not attempt to hold retail prices at the level they advertise. Only in part is this difference to be explained by the obstacles placed by the anti-trust laws in the way of the exercise of vertical control by American industrialists. Comparatively speaking, they are not interested in resale-price maintenance.

On the other hand, resemblances naturally abound. Outstanding has been the slavish imitation of the devices of one trade by other trades, and of the legislation of one State by other States. An example is the newspaper trade in Great Britain. Newspaper proprietors are concerned with reducing the costs of allowances on unsold copies, and have readily agreed to distance limits between newsagents' shops despite the loss of circulation which results. Other manufacturers, in industries which have no comparable 'returns' problem, have delighted their retailers by copying the distance-limit as a means to eliminate price-cutting, and have been rewarded simply by a loss of sales wherever consumers prefer a substitute, or abstinence, to a walk. America affords another illustration. In the State of California the retail druggists took the lead in promoting the Fair Trade Act of 1931, its amendment in 1933, and the Unfair Practices Act of 1935, also amended in 1937. The 1933 amendment was vital in making possible the control of retail prices quoted by third parties, while the Unfair Practices law aimed at checking monopolistic price discrimination or selling ‘ below cost ’. Similar fair trade legislation was hastily promoted by retail organisations throughout America: the legislatures had by 1938 dutifully passed it in forty-two other States, in several instances following the California model blindly, complete with a number of nonsensical misprints. They were still doing so long after California had realised some of the errors of her ways and had corrected them in the amending Act. Throughout America, groups of retailers have followed the prescriptions adopted by the druggists, in the dangerous belief that the stuff which undoubtedly makes druggists prosperous will set them up as well.

These reflections are prompted by a reading of Professor Grether's quite admirable study of resale price maintenance in America. To the English student, who is probably unaware that recent Fair Trading laws are concerned mainly with this problem, the title will hardly suggest the contents. It would be a thousand pities if anyone on that account were to miss this careful account of American developments during the last ten years, with its thorough-going economic analysis and its valuable appendices of law abstracts and retail statistics. But the name of Professor Grether should serve as an adequate insurance, for his little volume on *Resale Price Maintenance in Great Britain*, which embodied the results of his personal investigations in this country seven years ago, is well known and widely consulted as a useful supplement to the 1931 Report of the Board of Trade Committee.

The American interests which press for wider powers to enforce resale prices are still far from having attained their full objective. Fair Trade law-making received an impetus when the California law of 1931 survived a Supreme Court test in December, 1936, and a further victory was won in August, 1937, when, despite presidential opposition, the Miller-Tydings Act was passed, amending the Sherman Act and the Federal Trade Commission Act by removing resale price contracts in ‘ free and open competition ’ from the prohibitions under the former, and from the list of unfair methods of competition under the latter. But horizontal combinations and group action are still prohibited under the law. Resale price maintenance remains legal only upon an individual contractual basis. Under the Unfair Practices laws, the prohibition of sales below cost provides a weapon against ‘ loss-leader ’ forms of price cutting. Its effectiveness is by no means certain, however; for distributors' costs are (e.g. in the

California Act) defined as 'invoice or replacement cost, whichever is lower, plus all costs of doing business', and the costs of doing business vary with the type of business done by each distributor. The tendency of the enforcing authorities to insist upon every transaction bearing an *average* share will, if persisted in, prevent prices from being adjusted to cover only the particular costs incurred in handling particular goods, and force some distributors to abandon the sale of certain commodities. The distributors will learn how dangerous and vicious a weapon the new legislation can be.

Professor Grether's own conclusion is that, unless flexibility of pricing is to be destroyed, *general* statutory prohibitions should give way to control of distribution by administrative tribunals, which would have power to issue orders and rules after careful expert enquiry. The circumstances in which such a tribunal would be justified in varying trade practices by intervention are not, however, clearly laid down. Professor Grether's analysis of the problems involved in fixing prices and margins, and in identifying "unfairness", displays so complete an awareness of the difficulties inherent in the whole process that one could wish that he had illustrated by one or two detailed 'cases' the feasibility of arriving at remedies which are not worse than the disease. He whets our appetite on more than one occasion without, alas, proceeding to satisfy it. Thus, "much of monopoly power is either entirely advantageous or partly so to the community, especially that form of it derived from product and service differentiation in so far as it represents a better adaptation to variations in consumer wants and does not lead to the removal of the full differentiation in higher prices" (page 382). Will Professor Grether respond to an open appeal to contribute an article to these pages in development of this thesis?

ARNOLD PLANT.

The Incidence of Income Taxes. By DUNCAN BLACK. Macmillan. 1939. 316 pp. 12s. 6d.

The title of this book is misleading. Dr. Black is quite aware that the old distinction between the incidence and the effects of a tax is merely a hindrance to clear thinking. He considers effects, over both the short and the long period. Moreover he discusses what he calls partial income taxes—notably, taxes on the diamond monopoly and on gold-mining—as well as income tax proper.

He is kinder to the Colwyn Report than it deserves. It would be hard to find a worse example of muddled reasoning than the Report's discussion on whether income tax enters into price. The rigid distinction between incidence and effects, the failure to take adequate account of the expenditure of the tax and the consequent changes in demand for commodities and factors, the mythical "marginal firm" whose costs are supposed to determine price—these and other monstrosities are paraded in its pages. Dr. Black, aided by the famous article of D. H. Robertson, has no difficulty in exposing them for what they are, yet his gentle nature leads him to class the Report with De Viti de Marco's *First Principles* as a "source of an improved doctrine", on the ground that it takes account of the variation of factor supplies through time. He could not have found a more damning criticism of the doctrine prevailing before the Report was published.

His own discussion is scholarly and interesting. He considers the effects of an income tax on the supply of labour and capital, first in a stationary and then in a progressive community. His chapter on the effect of the income tax on the supply of labour per individual is particularly good. I think he might have gone a little further. For example, he might have urged that a man whose hourly rate of pay is raised will be most unlikely to reduce his hours of work so much that his total earnings fall. For if he does, he will have less money income and more leisure than before, yet the price (in terms of leisure given up) at which he can purchase a given extra amount of money income will be less than before. But the discussion, as far as it goes, is excellent, owing mainly to the use of indifference curves, which are especially appropriate to this problem.

As this is a book of some importance, it may be well to set out its main omissions. It contains nothing like a full discussion of the meaning of income. Dr. Black's interesting contribution to the "double taxation of savings" controversy, and such questions as whether capital gains should be taxed, or whether sums set aside to compensate for the depleted assets of mining and other companies should be exempt, would all fall into place within the framework of such a discussion. Further, there is no real analysis of the effects of income tax on the rate of interest. Nor is there any mention of the proposal to substitute an annual tax on capital values for the present tax on income from property, which differentiates against risky investments and against "cyclical" industries. The discussion of changes in factor prices is weak: the simple proposition that the relative prices of factors employed in a high proportion (to other factors) in expanding industries are likely to rise is nowhere clearly stated. Finally, Dr. Black restricts himself to the effects of small changes in income tax. This is unfortunate. At the present time we need to dispel the bogey that a standard rate of, say, ten shillings or more in the pound would be impracticable or dangerous.

But what Dr. Black does say is nearly always well reasoned and instructive. Good books on the theory of public finance are rare. It is a pleasure to welcome an addition to their number.

F. Benham.

The Germans and the Jews. By F. R. BIENENFELD. Secker and Warburg: London. 1940. 265 pp. 7s. 6d.

Even if one subscribes to the Swiftian view of humanity as the most pernicious race of odious little vermin that nature ever suffered to crawl upon the surface of the earth, one is still fascinated by the way in which these lice in their brief divagations under the blanket of the firmament pride themselves upon and fret themselves about their distinctive colourings and markings. We know of a man who returned home in a paroxysm of rage and threw a new suit of plus-fours into the dustbin because he had seen a Chinese subject arrayed in the same form of apparel. The American public, admitted President Wilson, would never grant race equality to the Japanese. Young Johnnie Constantine Stanley, one of the sweet and boyish rulers admired by Professor Santayana, described how to keep a Sikh regiment in order. "An officer commanding one of their irregular regiments rides through the bazaar in plain clothes, he meets one of his troopers whom he orders to salute, the sewer is insolent, the officer rides up to him, takes him by the long hair and throws him off his horse. The men have positive orders to salute *any* white face, not a private."

The puerile obscenities of the German propaganda against the Jews are almost beyond quotation. "German comrade, do you know that the Jew rapes your child, dishonours your wife, dishonours your sister, dishonours your fiancée, murders your parents, steals your property, sneers at your honour, mocks at your customs, destroys your children, ruins your culture, contaminates your race, that Jewish doctors are slowly murdering you ?" Not even a grudging tribute to the superman who could carry out this programme in a 24-hour day ! Add that one has met Austrian Jews writhing under the Nazi harrow in Vienna but anxiously concerned to distinguish themselves from Polish Jews and half implying that perhaps some of the latter had qualified for a beating up. What can the bilious philosopher do but wait for it to rain forty days and forty nights, while the more genial one takes refuge in the cultivate-the-garden form of escapism ?

It must be left to anthropologists, sociologists and theologians to decide whether this particular vileness is innate. Here we are concerned to enquire whether any natural viciousness is reinforced by economic factors. Mr. Bienenfeld's book is not solely or chiefly concerned with this aspect, but is a comprehensive erudite study of the problem indicated in the title. The author regards the present German campaign against the Jews as something unique in anti-Semitism. It is not a sporadic outburst of the old type, but a manifestation of the deliberate attempt to establish a new faith and a new philosophy. This is a religious movement involving positive and obvious results in all spheres of human activity, and the Jews happen to stand in the path of the new gospel. The measures taken against them are incidental to the revolution and the campaign against their economic power is a relatively unimportant corollary.

On this immense issue the reviewer is not qualified to pronounce. In spite of, or perhaps as a result of, the high degree of objectivity displayed by the author, most of the new faith and philosophy seems to emerge as mumbo-jumbo, and we should be inclined to attach a larger importance to the economic aspect than does the author. In fact, in spite of the disclaimer noted above, the author does devote considerable attention to it and this must be a warrant for a review in this journal.

Mr. Bienenfeld acknowledges that the Jews had attained a supremacy in certain branches of economic activity in Germany. He explains this by the fact that these branches had little or no prestige with the Germans themselves and that they were therefore contemptuously accorded to alien elements. The scale of valuations in Germany gave precedence, in order, to the officer, great landowner, civil servant, industrialist, artisan, peasant and worker. Banking, trading, journalism, literature and art were despised activities, and even the liberal professions, such as law and medicine, were in lesser esteem. Excluded in practice from the higher ranks of the former group, Jewish energy and initiative were canalised into the latter. This thesis Mr. Bienenfeld attempts to confirm by comparing the situation in countries where different scales of valuation prevail. In England, Holland and Switzerland, where banking is an honoured and highly-prized occupation, Jews do not predominate in that line, and the same is true of journalism. The theatre, still a somewhat vagabond art in Germany, was captured by the Jews, but also by actors from Austria, where a different valuation prevailed. The phenomenon goes far back into history. The Christian proscription on usury left this activity to the Jews, but when the canonical prohibition became ineffective the Jews had to abandon their function wherever the nation itself possessed the ability and acquired the respect for finance. In sixteenth-century Poland, in the absence of Christian master artisans the gap was filled by Jews, and the tradition persisted to modern times.

All this suggests that the author regards the Jews as a random sample of what pass for human virtues and vices, talents and gifts; and that their position at any particular time and place is determined by environmental factors. But the author in some places appears to be invoking the doctrine of the chosen race. In the only italicised paragraph in the book (p. 5) he declares that the Jews are a race of masters who instinctively strive to engage in higher occupations and actually do engage in them. We have to wait a long time (p. 163 *et seq.*) for an explanation of the term 'race of masters'. It apparently means that the Jews prefer independent occupations, however humble, to those in which conditions necessarily impose a greater degree of discipline and restraint on initiative. If this also means that the

Jews despise the position of the average employee, then they are guilty of a spiritual pride which is just as stupid as their opponents' exaltation of blind obedience. There is nothing which detracts from the dignity of either side in the system by which certain people, acting as risk-bearers, enter into more or less long-term contractual arrangements with other people and the latter engage to carry out instructions. If a Jewish hotel proprietor flatters himself that his race is superior to the job of porter, waiter or domestic he is summoning up the ghost of Pharaoh. And that ghost is easily awakened.

But the problem is larger than that. All true economic activity consists in the performance of processes which reduce the scarcity of goods and services and thereby tend to lower their prices. In a world still afflicted with grinding poverty any such performance should be regarded as meritorious. For a short period of mental aberration in the nineteenth century the world did take up that attitude, but it has now got back to its normal irrationality. " The Government's policy," said *The Times* at the beginning of this decade, " is designed to prevent a terrible intensification of the economic law by which the more there is of a commodity the cheaper it becomes." There could be no better epitaph for our age. Taken off our guard we may admit that the man who makes two blades of grass grow where one grew before is a benefactor, but we soon realise that this may occur in the case of our own crop. The result is that the man who adds to the supply of anything is a blackleg, a scab, an interloper or a dumper to some section or other of producers. Foreigners or alien elements have always been under suspicion in this respect. (Think at the moment of Federal Unionists sweating over the problem of countries with a lower standard of living.)

Nowadays the doctrine applies to our own compatriots. To-day in this country the free-born Briton has in many cases to apply cap in hand to a board for permission to engage in a particular economic activity. If he wishes to put a lorry on the road he has to appear before a Commissioner and prove that existing facilities are inadequate. Since the existing facilities for the output of any service are inadequate until the price has fallen to nil, this should be easy; but the Commissioner is not there to rule himself out of a job. Some unsophisticated applicants blurt out the fact that their object is to earn a living, and the celerity with which they are thrown out of the door would be comic if it were not so tragic. Imagine the fate of the alien or the refugee before these tribunals.

Fifty years ago Mrs. Sidney Webb wrote a report on the Jews of East London (later reproduced in *Problems of Modern Industry*), and we can celebrate its jubilee by a re-examination of its conclusions, since they show where high-minded thinking on this subject has led us. Mrs. Webb described how the Russian or Polish Jew landed in this country uncouth, dirt-bespattered, hunted and suffering. The 'greener' was glad at first to work for a shake-down, a cup of black coffee and a hunch of brown bread. But he was already in the maw of an advanced capitalist system. *A neighbouring sweater, pressed with work, offers him better terms.* (Our italics.) This definition of sweating should long ago have become a classic: it heralded a long succession of legislation to prevent unscrupulous employers from offering better terms. Mrs. Webb then went on to describe the progressive exploitation of the newcomer until he gets to the stage when he is comfortably installed in a model dwelling, his wife wears jewellery and furs on the Sabbath, and for their Sunday dinner they eat poultry. Last stage in this eventful degradation he becomes a master and presumably prepares to drag another newcomer into the mire of the model dwelling and breast of chicken. Why do these people first lend themselves to and afterwards practise such exploitation? Mrs. Webb explains. The foreign Jew totally ignores all social obligations other than keeping the law of the land, the maintenance of his own family and the charitable relief of co-religionists. This is as good a case against the Jews as any. Imagine how much more ghastly and chaotic this world would be if all people just obeyed the law, became good spouses and parents, practised charity and left it at that. It would be like a cathedral with people praying all over the place.

G. L. Schwartz.

The Economic Effort of War. By R. W. B. Clarke George Allen & Unwin, London. 1940. 250 pp. 7s. 6d.

There is a much better and more general appreciation to-day of the nature and problems of war economics than prevailed during the rehearsal of 1914–18. This may be due to the development of the scarcity approach to economics with its corollary of forgone alternatives, and a tribute must be paid to the eminent German who popularised this technique of analysis by propagating the slogan "Guns or butter". We now realise that, apart from what can be obtained by the sale of existing assets to people abroad, war must be waged by the contemporary effort of the country involved, and the real cost must be met during the conflict. The fact that the present Chancellor of the Exchequer believes that by appropriate allocation between taxation and borrowing the burden can be shared fifty-fifty with posterity is one of those touches of light relief which are so welcome in war-time. Let the enemies of Great Britain realise that she can carry even that sort of burden.

With regard to the principles of the distribution of the burden—the equity side of the problem—much less progress has been made. Everyone agrees that there should be equality of sacrifice and no one knows what that means. The chief manifestation so far has been a series of memoranda and representations complaining of the inequities of the Excess Profits Tax. There is also a growing feeling that the working classes have become a perpetual nuisance—they earn too little in peace-time and they earn too much in war-time. It would not be surprising if a campaign developed to abolish them. Still, this is only the second great war in our lifetime, and on the next occasion we may have acquired enough experience to adopt a logical and consistent programme from the outset.

Mr. Clarke's book is a comprehensive and salutary account of the problems entailed by the huge diversion of resources necessitated by modern warfare. If there are any lingering notions about the possibilities of business as usual, Mr. Clarke's vigorous analysis should effectively dispel them. When it comes to the measurement of this diversion, Mr. Clarke's work is much less satisfactory. His figures are necessarily based on estimates, but, even on his assumptions, his methods and calculations are deplorably confused and confusing. First of all, to give the reader some idea of Britain's capacity to produce, he presents the following extraordinary table :—

NATIONAL OUTLAY, PEACE-TIME.

	£ millions
Consumption of folk earning below £250 a year ..	2,850
Consumption of folk earning above £250 a year ..	1,650
New capital expenditure	400
Maintenance and depreciation	400
Exports visible and invisible	900
Public services (non-cash-benefit social services) ..	350
Defence expenditure	700
National income plus imports	7,250

This is supposed to represent the way in which the national income was spent. But what on earth is the exports item doing in this list, and what does Mr. Clarke mean when on the basis of this table he declares that the national resources total £7,250 Mn. a year ? There must be some esoteric meaning, because later on in the book (p. 145, p. 155) he argues that the estimated increase of £300 Mn. in the adverse balance of trade in war-time should be transferred to the Exchequer. The meaning of this is absolutely beyond our comprehension. Mr. Clarke's adjusted table for national outlay in war-time is presented in the same awkward form, and, to make confusion worse, he excludes the value of the services of the fighting forces from the national income. His figures are therefore intended to measure the potential output of the civilian population, out of which a tribute has to be paid to the army of mercenaries. If the reader bears this in mind he can make the appropriate readjustments in Mr. Clarke's calculations, but he ought not to come across this illogical distinction in a modern economic treatise. Mr. Clarke is on much safer ground in his later chapters, and his analysis of the man-power problem does much to clear up his earlier obscurities.

The apparently obvious method of calculating the magnitude of the sacrifice required from the community is to estimate the potential national income with full employment, and to subtract from it the Budget figure for war expenditure. The remainder represents the income left free for civil consumption and any expenditure on capital additions. A comparison with the pre-war figure for civil consumption will show the inevitable reduction to be imposed in this field—the belt-tightening process. Mr. Clarke's estimates require a curtailment of civil consumption from £4,500 in peace-time to £2,800 in war-time. This is a reduction of about 40 per cent. in value, and implies a corresponding reduction in physical consumption. Now this method of calculation has its pitfalls. It is the purely fiscal aspect of the process. If the national income rises to £6,500 Mn. and the Government requires £3,000 Mn. for its war expenditure, then certainly the population has to transfer £3,000 Mn. to the Exchequer Account. But this is not the same thing as the real cost in the sense of forgone alternatives of private consumption. Not all of the £3,000 Mn. will divert resources into the production of guns, shells, aeroplanes, tanks, warships—things out of which no belly gets a material satisfaction. Some of the £3,000 Mn. will be spent on food, clothing and creature comforts for the forces, and these things would have been produced and consumed in peace-time. The regimental barber is not diverted from his peace-time activities: he does the same work in uniform. (He will probably have been a butcher in peace-time, but then the civilian hairdresser will be found in the cook-house.) Mr. Clarke recognises that this is equivalent to a reduction in the number of consumers to be maintained out of the free income of the population, but he does not think the point is important.

Then there are other items representing transfer and not exhaustive expenditure. Soldiers' family allowances are levied from the community *qua* taxpayers, but returned to it *qua* consumers. Subsidies to keep down the cost of food are collected into the Exchequer and in effect redisbursed to the civil population. On the other hand, some resources are diverted to war effort but without monetary cost. Voluntary A.R.P. service is as much a real cost as any of the paid services, although most people think that a real economy is effected by cutting down the pay-roll. When Lord —— is seconded on full pay by his firm to the government, the taxpayer feels duly grateful at getting these services for nothing, and then pays the salary in his role as consumer. The firm probably has statutory powers to cover its costs. The Treasury has a bag of these little tricks for keeping down the nominal cost of the war. To get the notion of real cost we have to ask what goods and services are being produced which no sensible person would regard as of the slightest benefit to human welfare under peace conditions, or alternatively what proportion of the occupied population is engaged in rendering such services. The summation is difficult, if not impossible; but the concept is clear enough.

Not only does the 'budgetary' approach give a misleading notion of the real sacrifice, but it also gives a wrong impression of its distribution. Mr. Clarke brings down civil consumption from £4,500 Mn. to £2,800 Mn. a year and apportions the reduction between the various classes of the community and the various items of consumption. As was said before, he implies that the reduction in monetary expenditure entails a corresponding reduction in physical consumption. One of his suggested reductions is 33⅓ per cent. in the expenditure on rent. Now does this mean that the population is to give up one-third of its building accommodation? But if it tried to spend 33⅓ per cent. less on rent, rents would fall until the whole accommodation was available at the reduced price. The sacrifice would be forced on to the landlord class. This would not worry Mr. Clarke, but it shows the danger of trying to fasten physical sacrifices on to different sections of the community. There must be many cases in which part of the burden will be shifted to the owners of fixed equipment.

There is one aspect of this process which Mr. Clarke could not be expected to foresee. He suggests a 25 per cent. reduction in the expenditure on fuel, light and water. But when we try to effect such economies, the public utilities put up their prices to offset the reduced turnover and quote statutory authority to justify this procedure. On this reckoning the last householder left in an evacuated area would pay the whole pre-war gas bill of the district plus the cost of elaborate newspaper advertisements explaining the reason. This is a useful foretaste of the larger planned economy we are promised in the post-war epoch.

G. L. SCHWARTZ.

The Economics of a Declining Population. By W. B. REDDAWAY. George Allen & Unwin. 1939. 270 pp. 8s. 6d.

The public is now generally aware of the changing age-structure of the population and its probable decline in thirty or forty years time. Unfortunately in the process of being convinced it has been subjected to prophecies which, in their threat of miseries to come, almost surpass the gloomy visions of Malthus and his contemporaries. Although Mr. Reddaway's book is called *The Economics of a Declining Population* he is rightly concerned more with the changing age-composition of the population which will continue for the next thirty or forty years—since this is certain—than with the position one hundred years hence. Consequently he manages to keep his feet on relatively firm ground and to avoid speculative flights of the imagination which may well prove to be as misguided as those of Malthus. Even so, the difficulties of prophecy are considerable and one can hardly be surprised at the tentative nature of many of his conclusions.

Part I of the book deals with the statistical problems of forecasting future population changes. It is an able exposition, in simple terms, of the necessity for using specific fertility and specific mortality rates in place of the crude rates to which the public has been accustomed. (At the end of the first paragraph, on page 23, " mortality-rates " should read " fertility-rates ".)

Part II can be divided into four sections—the problem of unemployment, the size and distribution of the national income, public finance and international trade.

Mr. Reddaway distinguishes particular unemployment which is, in his opinion, likely to become more serious, from general unemployment. He gives a simplified but intelligible account along Keynesian lines of the factors determining the general level of employment. If slumps can be prevented in the future from becoming more severe income per head should rise, for invention will continue and the amount of capital goods per head will be greater. Although it is difficult to dogmatize on the relation between size of population and the amount of income per head, Mr. Reddaway believes that economic nationalism is likely to be a more important factor making for a reduction in the economies of scale due to division of labour than any probable reduction in the population. There are, however, two possible developments which may create serious difficulties. Firstly, he believes that the openings for new capital will, in the absence of special measures, be insufficient to maintain employment. He appears to be of the opinion that, in spite of the potential demand for capital from countries like China, the restrictions on international trade will cut off this source of demand for capital outlay. Unfortunately our views on these aspects of the problem must inevitably be tentative, for invention and political change are largely unpredictable. Is there really very much more justification for the belief that profitable openings for investment will soon become exhausted than for Malthus' prophecies of misery and distress ?

Secondly, he argues that the greater relative importance of luxury and semi-luxury goods associated with an increasing standard of living will increase the riskiness of production. Statistics of variations in sales volume and net profits suggest that the reverse is true. Certainly the sales and net profits of department stores show considerably smaller variations than those of iron and steel producers.

Mr. Reddaway is sceptical of the value of attempts to determine whether an increase in the amount of capital will improve the relative share of labour in the national income ; but instead of saying that the analysis of relative shares depends on the assumption of a homogeneous and mobile labour force, he bases his argument on the improbability that new capital will be suitably distributed in all uses and thus bring down the rate of return on existing capital assets. If labour were homogeneous and mobile and the marginal productivity of capital positive, the rate of return on old capital must fall even if none of the new capital is directed into the old industries, and the share of labour would be higher than if the new capital were to be suitably distributed between all industries.

For various reasons, including increasing economic nationalism, Mr. Reddaway considers that Great Britain will find it increasingly difficult in future years to secure her present volume of food imports on equally favourable terms. A decline in population will, therefore, alleviate the position to the extent that the demand for food imports will be less. But it will remain true, as in the 19th century, that the interests of Great Britain lie in free trade.

The major problems in the sphere of public finance are two. During the next thirty years the number of old persons in receipt of pensions will increase as a result of reductions in mortality. On the other hand, the reduction in the number of children is likely to have little effect on the public finances since children are to a greater degree dependent directly on income earners than are old people.

The other main problem is that of the national debt. Mr. Reddaway concludes that this difficulty is frequently exaggerated, but he points out that a major war would make the whole discussion of public finance almost irrelevant (his book was written before September of last year). He modestly adds that a major war would probably make the whole of his book irrelevant also. Nevertheless, while some of his estimates will necessarily now be of little practical significance, his analysis remains as a useful contribution to clear thinking on the population problem.

R. F. FOWLER.

An Eighteenth Century Industrialist. By T. S. ASHTON. Manchester University Press. 1939. 156 pp. 8s. 6d.

This is a welcome and distinguished piece of ‘ business history ’. Without any fussy paraphernalia it tells the story of the file-making firm of Peter Stubs of Warrington for the half-century following the outbreak of the Seven Years War. ‘ Business history ’ has no fixed boundaries. Told from business records, it might be very wearisome in unskilful hands. An infinite deal of it might do no more than pile interminable Pelions upon uncompassable Ossas to serve only antiquarian purposes. Mr. Ashton’s work is short, spare and disciplined—no criticism lies against it on the score of either prolixity or narrowness. His most interesting study throws light on the basic business problems and relationships of a new and expanding firm during a most important epoch. If Mr. Ashton makes few comparisons with other trades, so that assessment of the general validity of his particular story is difficult, he is entitled to point out that no systematic study has been made of the tool-making trades and comparisons, therefore, would be hazardous. Even so the value of his book is considerable. That value may be briefly indicated. The non-textile phenomena of early industrialisation (a field that is peculiarly Mr. Ashton's own) become clearer because of this study of the Peter Stubs unit. So do the processes of building up technical skill, the entrepreneurial function, employment policies towards debt-ridden outworkers and first-generation factory 'inmates' (as they came sometimes to be called), as well as market and financial relations and mechanisms. There are sidelights of unusual interest upon economic institutions and practice that are worth knowing about. For instance, when maltster-brewer-innkeeper Stubs took to file-making he made his different activities mutually helpful. He found that his 'barm-bottoms' made a good protective paste for his files: his inn became a fertile source of industrial intelligence, used as it was by his business associates, and through both its friendly-society and social functions a useful auxiliary in relation to his labour. Valuable light is thrown on the financing of the Stubs industrial unit, which only acquired a bank overdraft when it had advanced from small beginnings to an establishment in which production could be carried on 'in a large way'. There is a most interesting chapter on *the medium of exchange* in which the working of the internal bill of exchange is described. That Lancashire preferred bills rather than notes at this period has long been known, but Mr. Ashton's explanation of the way the system worked is admirably fresh and clear. But this singularly attractive study is full of good things. Here is a palimpsest whose forgotten writings on social and economic behaviour at a vital period Mr. Ashton brings again to life. His hand has great cunning and all students of the period will be grateful to him.

H. L. Beales.

The Bank of Canada. By Milton L. Stokes. Toronto: The Macmillan Co. 1939. xii + 382 pp. 18s.

The history of the Canadian banking system includes two features of unique interest—the Finance Act of 1915 and the nationalisation of the Bank of Canada. In this book the interrelations of these events are clearly explained.

Dr. Stokes shews first that the merits of the Finance Act did not survive the war-time inflation which gave it birth. It was indeed a curious arrangement by which the chartered banks could obtain unlimited accommodation from the Treasury Board; for the latter disclaimed responsibility for controlling credit and manipulated the rate of interest to facilitate Government financing. Dr. Stokes rightly condemns the ensuing irresponsibility, and seems to be justified in claiming that chaos was only averted by the ingrained caution of Canadian bankers.

But though the Finance Act was unsatisfactory there was no unanimity about the remedy. To substitute a Central Bank for the Treasury Board was clearly one possible solution. But at first it was advocated only by the Western Provinces, where it was visualised as a source of unlimited cheap credit for farmers. Even after the Macmillan Commission of 1933 had recommended its creation, intense political squabbles raged over its constitution. Consequently, when the Conservative Government in 1935 set up the Bank of Canada as a privately-owned institution, their decision helped to lose them the ensuing election, and the Bank became publicly controlled in 1936 and publicly owned in 1938.

There remains the analysis of its powers. Since its brief life was not marked, before last September, by any serious commercial difficulties, no real experience of control had come its way. But as the chartered banks habitually keep reserves of double the legal minimum and the Bank has no power to vary the latter, as its open-market operations are limited by an immature market and its moral influence by its own youth, the scope for central control does not appear large. Added to this are the irreconcilability of Eastern and Western interests, and the divergence between the New York and London exchange rates. Thus its problems are certainly thorny, however intriguing they may be to the student of Central Banking.

This is the story which Dr. Stokes has to tell, and though his exposition is marred by repetitions, the main issues are clearly stated. He has written an illuminating contribution to banking history.

J. K. Horsefield.

Foreign Exchange. By F. J. Docker. London: P. S. King. 1939. xii + 326 pp. 15s.

This survey of recent developments in the management of the foreign exchanges has been written by an Australian accountant for the enlightenment of business men. Drawing material largely from League of Nations publications, the author reviews the breakdown of the multilateral trade of pre-1914 days, and its replacement by clearing agreements *et hoc genus omne*. He describes also various forms of exchange control and the constitution of Stabilisation Funds, denounces the Gold Standard, and emphasises the great importance of capital movements, especially to debtor countries like his own.

Mr. Docker is less successful in interpreting his facts than in collecting them, but those to whom his sources are difficult of access will find here an efficient summary of the legal and statistical data at the time the book was written, which from internal evidence seems to have been chiefly in 1938.

J. K. Horsefield.

Indian Agricultural Statistics. By P. J. THOMAS and N. S. SASTRY. University of Madras. 1939. 100 + 42 pp. Rs. 3.

This excellent guide to the existing agricultural statistics of India, to their method of collection, compilation, and publication, will prove of great value to all who are interested in the economic welfare of India. The authors explain with great clarity the basis, nature, reliability and utility of the existing statistics, with special reference to the methods of crop forecasting in India, which are compared with those utilised elsewhere, especially in the United States and Great Britain. It is shown that the information collected is totally inadequate for assessing the national income or economic welfare of the country, although they are of some assistance in judging the trend of production. The conclusion is reached that in general the production of cereals is adequate, and that food production has at least kept pace with population increase, but that what is badly needed is a more balanced diet—in particular, the production of more vegetables and milk. Hence the great need is to " increase the yield from the existing acreage under staple crops so as to liberate land for dairy production, vegetables, and fruits ", and to plan a better distribution of the present income of the people.

The most valuable portions of the book are the criticisms of the existing methods of collecting the statistics and the recommendations for improvement. The latter reveal a firm grasp of practical difficulties, and admirably combine a desire for more scientific data with a keen appreciation of the need for economy. It is to be hoped that those responsible for the policy pursued and for the detailed administration in connection with crop forecasting and the compilation of the statistics will take advantage of this admirable summary of the main defects of the present system and of the sensible and practical proposals for reform.

VERA ANSTEY.

The Economic Geography of Barbados. By OTIS P. STARKEY. Columbia University Press, New York. Oxford University Press, London. 1939. 228 + xii pp. 19s.

The Sugar Economy of Puerto Rico. By ARTHUR D. GAYER, PAUL T. HOMAN, and EARLE K. JAMES. Columbia University Press, New York. Oxford University Press, London. 1938. 326 + xviii pp. 18s. 6d.

Mr. Starkey believes that " civilisation is the product of moderate adversity ", and has set out to prove that " Barbadian progress would have been slower had the Barbadian environment been more stable ". His book opens with a 50-page summary of climate, structure, soil and other environmental factors which set the background for economic activity. This is followed by 90 pages of potted economic history from early settlement to modern times, 30 pages in which he discusses *inter alia* the effects of rainfall, pests and diseases, manuring and experiments in cane breeding on the output of sugar (this is the most interesting chapter), and a final 60 pages into which he puts miscellaneous statistics and his conclusions. The whole emphasis is on the reactions to disasters such as hurricanes, epidemics and slumps, and though Mr. Starkey is able to show that Barbadians rebound like rubber balls from every adversity, he cannot of course prove, as he claims to have done, that there would have been less progress if there had been fewer hurricanes and pests.

There is useful material in the book which will prove of interest to historians and geographers ; but the author is so intent on following up the disasters that he leaves little picture in our minds of the people themselves—their economic organisation, social structure, and kindred matters which are needed to complete a picture of a people at work and play. Nevertheless the treatment is competent enough to persuade us that a better theme, a little more material, and a considerable rearrangement would enable Mr. Starkey to produce a really good economic geography of Barbados.

Messrs. Gayer, Homan and James were invited to Puerto Rico by a group of sugar companies to make an impartial analysis of the problems of the sugar industry, and to advise on those which have become live political issues. They have made a thorough investigation of the industry, and its value to political protagonists will not be lessened by its dazzling array of 111 statistical tables.

The set-up of the industry is common to most of the islands in the Caribbean. There are three parties to it : mill-owners, who buy cane (and also grow some) and manufacture it into sugar ; planters with holdings of varying sizes, who sell to the mills ; and wage-earners, largely landless. Each is anxious to improve his position vis-à-vis the others, and it is on the various claims they make that the authors are asked to report.

They find that between 1923 and 1935 three of the largest mill-owners earned an annual average of 10.2 per cent. on their investments ; but

> " What has to be recognised at the outset is that the limits of improvement for *colonos* (planters) and workers at the expense of (mill) owners are rather narrow. A dollar a week added to wages and a dollar a ton added to the price of purchased cane would probably eat up almost the whole profit of good years and create large losses in poor years. Assuming (unwarrantedly) that this could be done without impairing the industry, it would still leave rates of remuneration low by Mainland standards (except as compared with agricultural workers in the Southern States), and not greatly improved by Puerto Rican standards. Nevertheless, where standards of living are as low as in Puerto Rico, almost any increase of remuneration is important, so that their meagreness

does not make the possibilities of improvement futile to discuss."

They admit that the planters have been in a weak bargaining position vis-à-vis the millowners, partly because they are indebted to them, and partly because of the geographical location of some of the mills, and appear to approve of a law passed in 1937 to fix a minimum price for canes. As for the workers, the trade unions are hampered by the existence of many small growers who cannot afford to pay the wages which the unions would like to impose on the larger ones, and no specific recommendations on this point are made.

In Puerto Rico, as in other West Indian islands, the concentration of land has come under sharp fire. Though there are a number of smallholders, 60 per cent. of the cane area is in estates of over 500 acres, and in an agricultural community where there is only 7-10ths of an arable acre per head, the result is not unnaturally the gravest social and political tension. The authors do not favour suggestions for breaking up estates, holding the emphatic view that efficiency and output would decline; but they put forward no alternative proposals for dealing with this important problem. They are also opposed to suggestions for diverting land from sugar to food production, such as appear to have impressed British West Indian administrations in recent months; to reduce imports at the cost of reducing exports can only increase social welfare within very narrow limits.

The dominant feature of the island's economy is its dependence on assistance from the mainland (it is an American colony). The authors point out the value of the American tariff to Puerto Rican producers, but mention only incidentally the assistance from the A.A.A. and public works agencies; more details here would have been useful. Industrialisation is mentioned as one of the more hopeful prospects for the future, but the authors comment that in face of predatory dumping by mainland manufacturers it could only proceed under Government protection.

The book does not set out either an economic programme for Puerto Rico or concrete proposals for increasing social welfare. But its sober presentation of facts and figures should prove a useful foundation to politicians and administrators throughout the West Indies.

W. ARTHUR LEWIS.

World Economic Survey, 1938–39. League of Nations, Geneva. Allen & Unwin, London. 1939. 247 pp. 6s.

The dominant feature of the period covered by this volume of the survey was the recovery from the 1937 recession. Its effects on employment, trade, public finance, the money markets and so on are summarised as in previous volumes, and fitted into the picture of world economic history since 1929.

This last recession differs notably from that of 1929 in the shortness of its duration. Mr. Meade, who is responsible for this volume, attributes this primarily to prompt monetary measures to prevent " deflation " and to rearmament, and he pays particular attention to public finance and the money markets, in order to show their relationship to recession and recovery.

The chapter on Commercial Policy brings out two useful points. The first is that recession gives a great stimulus to trade restrictions ; one country after another felt itself compelled in 1938 to impose further restrictions in order to reduce the strain on its balance of payments. The other is that though discriminatory restrictions continued to progress under German leadership, 70 per cent. of the world's trade is still carried on by countries operating on a predominantly open and competitive basis. Moreover a steady liberalisation of international trade has been proceeding for many years under American leadership, with the Anglo-American agreement as its high spot. The moral is two-fold. If this war can be brought to a rapid and successful conclusion, we need not be unhopeful of rebuilding international order in the economic sphere ; but on the other hand no plans to this end will be workable which do not provide for international control of the trade cycle, and international assistance to mitigate its effects.

Economists have come to expect a high standard from this survey ; no better praise can be given to the present volume than to say that it admirably maintains the traditions of its predecessors.

W. ARTHUR LEWIS.

Recent Important Foreign Books on Economics

The Librarian of the British Library of Political and Economic Science has made arrangements, as a supplementary check to the purchases of the Library, to receive regularly every quarter from competent foreign scholars lists of the most important books in their respective fields of study published in their own countries (or languages as the case may be) during the preceding three months. It appeared to the Editorial Board of Economica that these lists might prove useful to other institutions, and the lists of books on economics will therefore be published regularly in future issues of Economica. It must be understood, however, that the Editorial Board of Economica accepts no responsibility for the selection of the books included in the list.

FRENCH BOOKS

(Selected by Dr. R. Marjolin and M. Henri Lemaître).

Baudin, Louis : *Le mécanisme des prix.* Paris.

Laufenburger, Henri : *L'économie allemande et l'épreuve de la guerre.* Paris.

Lescure, Jean : *Étude sociale comparée des régimes de liberté et des régimes autoritaires.* Paris.

Magne, J. M. : *La recherche de l'équilibre budgétaire en France depuis 1930.* Paris.

Piatier, André : *L'économie de guerre.* Paris.

Pirou, Gaétan, *and* Byé, Maurice : *Traité d'économie politique.* Paris.

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ITALIAN BOOKS

(Selected by Professor Luigi Einaudi).

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Gobbi, Ulisse : *Elementi di economia corporativa.* 4th ed. Milan.

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We deeply regret to record the death on Thursday, August 8th, 1940, of Dr. Eileen Power (Mrs. M. M. Postan), Professor of Economic History in the University of London, and for the past seven years Joint Acting Editor of ECONOMICA.

British Floating Debt Policy[1]

By F. W. Paish

The history of the British floating debt during the twenty years from 1919 to 1939 falls into three sharply divided parts. During the first, from 1919 to 1923, the total floating debt was reduced by nearly half, from £1,500 Mn. to £800 Mn., though it seems likely that a large part of this reduction occurred in bills held by the Bank of England and government departments. With these we are not now concerned, for the details of financial arrangements between government departments, though sometimes interesting and occasionally revealing, do not throw much light upon the working of economic principles. The second period, from 1923 to 1931, is the one which is richest in discussions of policy. Though during this period the total of Treasury Bills issued by tender to the public, which alone need be considered here, remained, apart from seasonal fluctuations, at an approximately constant level, the question of whether this level was a desirable one was discussed in detail before two important government committees,—the Colwyn Committee of 1925 and the MacMillan Committee of 1931—as well as in numerous articles in newspapers and periodicals. Among the latter, the articles in the *Midland Bank Review* must be regarded as the most authoritative.

In the third period, after Britain's departure from the gold standard, the methods used for the financing of the gold purchases of the Exchange Equalisation Account have had the incidental effect of causing the total of Treasury Bills issued by tender to show much wider fluctuations. During this period new considerations emerge, which will be discussed in the latter part of this article.

From the discussions of floating debt policy during the second of the periods mentioned above there emerge three main criteria of policy. These may be conveniently described as (1) the liquidity of the Treasury; (2) the liquidity of the remainder of the system; (3) the cost to the Treasury. Unfortunately the meaning of the term liquidity has been so circumscribed in recent economic literature that before it can be used in the present context it is necessary to pause for a moment to free it from some of the shackles which have been riveted upon it.

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[1] This article is a sequel to that published in Economica of August, 1939, under the title of "Twenty Years of the Floating Debt". Reference to the earlier article should be made throughout.

The concept of liquidity has for many years been used in ordinary business parlance in two somewhat different senses. In the first place it is used of an asset, signifying the ease, speed, certainty, etc., with which it can be converted into cash; and secondly it is used of the general financial position of individuals or firms, signifying the ease with which they may be expected to meet their obligations. In neither of these uses of the word has it any high degree of quantitative definition. It is often impossible to decide even which of two assets may be regarded as the more liquid, until we have before us other information, such as the period of time which is to be reckoned as available for the process of liquidation. If, for instance, the period is short, an asset which can be sold rapidly even at the cost of a possible heavy fall in price, such as a Stock Exchange security, must be regarded as more liquid than another, such as a good but unmarketable debt due at notice, which can certainly be turned into cash without loss, but only over a period of time. Further, the liquidity of an asset will often depend on the point of view of the person taking the decision. A creditor, prepared to force his debtor, if necessary, into complete liquidation, need have regard only to the actual marketability of the asset in question. But its owner, in making his own decisions, must have regard not only to its marketability, but to its relation to his other assets and to his own earning power. If the sale or pledge of an asset would entail the extensive immobilisation of other assets, he cannot regard it as easily available for meeting his impending obligations, and in his scale of liquidity it will probably rank below other assets less capable of rapid realisation but also less essential for the continued conduct of his business.

In the wider application of the term liquidity to a whole financial position, the point of view of the judge is of even greater importance. A creditor will often be justified in confining his attention to existing liquid assets and current liabilities, and in expressing the liquidity of his creditor in terms of the ratio of the former of these to the latter; though even a creditor will, on occasion, find that it pays him to take account of other factors, such as the expected earnings of his debtor, the probability of his being able in need to raise capital or borrow money elsewhere, the probability that he will not in fact be called upon to meet some part of his legal obligations, and so forth. But the controller of a business, or even a private individual, if he is to form a clear idea of the liquidity of his position, must take into account the expected flows of the whole of his receipts and payments during the period for which estimates are possible. If he can see his way clear, in all probable circumstances, to meet not only his legal debts but also all other payments which he wishes to make, with a margin for unforeseen contingencies, then he can regard his position as liquid. Perhaps, indeed, the best definition of liquidity is in terms of the margin over foreseen payments of foreseen receipts plus dispensable liquid assets.

If the result of such a consideration of a financial position reveals an insufficient margin for contingencies, various steps may be taken to increase it. Earnings may be increased by harder work, anticipated expenditure may be reduced, less liquid assets may be exchanged for more liquid assets, or money may be borrowed on long term. In any case the results will take one of two forms—either liquid assets will be increased, or current liabilities reduced (as compared with what they would otherwise have been).

That a reduction of current liabilities may be quite as effective a method of increasing liquidity as is an increase of liquid assets is clear if we regard the current liabilities as immobilising part of the liquid assets and rendering them unavailable for other uses. This is most obvious where the assets are pledged as security for a loan, or where the continuance of the loan is contingent upon the debtor retaining possession of the assets. But even where the debtor is under no actual obligation, he will necessarily survey his assets in relation to his liabilities, and will be the less willing to see any shrinkage in his liquid assets the more they are balanced by current liabilities. A reduction in these liabilities therefore sets him free to reduce his liquid assets if occasion should require.

In recent years economists have made increasing use of the concept of liquidity, especially as an approach to monetary problems. But in giving precision to the term, they have generally amalgamated the two senses in which it is used in business terminology. They have applied the term to the general financial position, but have generally confined their consideration to changes in the distribution of assets, or even to the single item, cash. This limitation is unfortunate, since, if maintained, it would prevent us from applying the valuable concept of liquidity to many problems where it appears to provide the most convenient method of approach.

The extension of the concept of liquidity to cover changes in the distribution of liabilities through time enables us to apply it to the financial position of the British Treasury. The British Treasury held, until the inauguration of the Exchange Equalisation Account, virtually no liquid assets of its own. Its balance at the Bank of England at the dates of its weekly financial statements rarely exceeds two or three million pounds, and to meet temporary excesses of payments over receipts it depends on short-term borrowing. The bulk of its short-term borrowing is in normal times from the banks and the money market on three months Treasury Bills. It also borrows on Treasury Bills from other government departments and from the Bank of England. These latter borrowings can be allowed to fluctuate more rapidly than its borrowing from the market; in anticipation of exceptionally large payments by the Treasury the other departments frequently accumulate increased balances in public deposits at the Bank of England, which they place at the disposal of the Treasury in exchange for Bills when the date of payment arrives.[1] The Treasury also borrows on open account (Ways and Means Advances) both from government departments and, in emergency, from the Bank of England.

From the foregoing it is clear, that, like a firm operating on overdraft, the British Treasury depended for its liquidity on its power to borrow on short-term from the market, from other government departments, or, in the last resort, from the Bank of England. Until 1932 there was, however, this difference. A firm operating on overdraft normally holds liquid assets substantially in excess of its debt out of which, in emergency and at some cost in convenience or output, the debt can be reduced or liquidated. The Treasury had no such assets, and to meet a demand for repayment by one section of its creditors had no recourse in the short run but to increase its borrowings elsewhere. Since the resources of the departments at that time were limited, the ultimate guarantee of its ability to meet its debts as they fell due was its power of borrowing from the Bank of England.

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[1] For a fuller description of these operations, see ECONOMICA, August, 1939, pp. 251–2.

If a demand for the repayment of Treasury Bills was due merely to a demand for increased holdings of idle money within the country, this guarantee was adequate. Such a demand could be satisfied either by an increase in bankers' deposits at the Bank of England, which could be provided at the Bank's discretion, or by an increased supply of Bank of England notes, which could be provided by an increase in the fiduciary issue. A relatively small increase in one or both of these would very rapidly restore the clearing banks' ability to resume their purchases of bills, and so bring the period of stringency to an end. If, however, the demand for increased cash for internal use was for supporting a rising trend in prices which the Bank of England considered undesirable and wished to check, the existence of a large amount of short-term government obligations in the hands of the public might prove an embarrassment to the Bank in the carrying out of its policy. This would not be due merely to the natural reluctance of the Bank to impose on the Treasury an additional cost by reason of a rise in rates of interest, such as would occur in the absence of a floating debt. At such times, the direct effect of a moderate rise of the Bank of England rate and other short-term rates of interest in checking business activity is probably small. Much more important is the quantitative limitation on loans which a rise in the Bank rate causes banks and others to impose on their debtors, whether in the form of higher margin requirements or otherwise. By such means, an incipient inflationary boom can often be checked with a relatively small rise in published rates of interest. But if there exists a large amount of government floating debt in the hands of the public, maturing week by week, such methods of quantitative limitation lose much of their efficiency, for, by a refusal to renew its bills, the Treasury can be forced to provide the banks and the market with enough additional cash at the Bank of England to offset the previous restrictions. The only way to prevent this is for the Treasury to pay such rates on its bills as will by themselves provide a sufficient incentive to their holders to renew them, or for others to buy them. This rate may well be substantially higher than the rate which, in the absence of the floating debt, would have been charged for such short-term loans as were still granted. In other words, the Treasury is a short-term borrower whom its Bank cannot ration. Its short-term obligations to the public may therefore cause the rationing system to break down, and may compel a rise in short-term interest rates to a level sufficient by itself to check the expansion of business activity.

In the event of an increased demand for cash for the purchase of foreign exchange, the difficulties created in a country on the gold standard by the existence of a large floating debt are even greater. Unless rates of interest are allowed to rise to a level sufficient in itself to check the outflow of capital (and where confidence in the future of the currency is shaken this level may be very high indeed), the Treasury can be compelled to provide large weekly amounts of cash at the Bank of England, thus furnishing those wishing to withdraw gold with the necessary sterling funds. If gold reserves are inadequate to meet the demand, the Bank may have to choose between refusing the request of the Treasury for additional facilities and itself running the risk of being unable to meet its own obligations to pay gold. Thus the Bank's power to lend to the Treasury in this type of emergency is largely dependent on the size of its gold reserve; while the likelihood and probable severity of the emergency itself depends largely upon the proportion of Treasury Bills held either by foreigners or by institutions with large sterling obligations to foreigners. Before 1932 the ultimate guarantee of the liquidity of the Treasury was therefore the Bank of England's gold reserve; and the possibility that this guarantee would be needed depended largely upon the volume of foreign money in London.

In the light of these considerations, the attitude of the Treasury, as revealed by the evidence of its representatives before the Colwyn and MacMillan Committees,[1] is easy to understand. With an inadequate gold reserve at the Bank of England, large amounts of foreign funds in London, much of them probably invested in Treasury Bills, and a persistent tendency towards an adverse balance of payments, the Treasury, both in 1925 and in 1930, might well feel uneasy at the size of its short-term commitments and wish to reduce them. Its forebodings were to be only too well justified by the events of 1931, when the Bank of England had to choose between defaulting on its own obligations to pay gold, and compelling the Treasury to default on its obligation to meet its bills on maturity. Given the other conditions present at the time, it is, of course, not improbable that the Bank would have done the same even if the Treasury's floating debt had been much smaller; but it is certain that, whatever the other circumstances, the existence of so large a public floating debt would have made it extremely difficult for the Bank to make effective the stringent measures which alone might have enabled it to continue to meet its obligations.

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[1] *Colwyn Committee : Evidence*, pp. 288, 394, 622, 623, 668. *Colwyn Committee Report*, p. 35. *MacMillan Committee : Evidence*, Vol. I, p. 32 ; Vol. II, pp. 9, 10.

In spite of the wishes so clearly expressed by the Treasury's representatives and of the recommendations of the Colwyn Committee, we find that during the whole period from 1923 to 1931 the total of the Treasury's short-term liabilities to the public (that is to say, of Treasury Bills issued by tender), showed no decline on balance, while, throughout the period, the fluctuations in the total, apart from seasonal movements, did not exceed about £70 Mn.[1] The reasons why, in face of its expressed wishes, the Treasury failed to make any net reduction in its total of "tender" Bills, must be sought partly in its own financial position, and partly in the repercussions which a policy of drastic reductions would have had on other parts of the economic system.

In the first place, the floating debt was not the only threat which existed to the liquidity of the Treasury. In addition, at the end of the War of 1914–18 the Treasury had some £2,000 Mn. outstanding of medium-term debt—Exchequer Bonds, War Bonds, and Treasury Bonds—of which substantial amounts matured each year. The task of funding or replacing these issues presented a constantly recurring problem, for at any moment a failure to float the necessary loan would involve an automatic increase in the floating debt. Such an increase, though a small one, in fact occurred in the spring of 1929. It can be understood that these constantly recurring periods of pressure, each threatening a rise in the floating debt, helped to make it difficult for the Treasury to float additional loans for the reduction of the floating debt itself. Actually, by reducing its medium-term debt from nearly £1,600 Mn. in 1923 to little more than £600 Mn. in 1931, the Treasury did in fact succeed in substantially improving the liquidity of its position despite the unchanged amount of its short-term debt.[1]

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[1] See ECONOMICA, August, 1939, p. 249, Chart 2.

Even if the Treasury had been able, without difficulty, to issue long-term loans between 1923 and 1930 of sufficient size to effect large reductions in its floating debt, it would probably have been deterred by consideration of the probable effects of its action on the other parts of the system. It is, of course, not peculiar in the fact that changes in its own liquidity normally have converse effects upon the liquidity of others. Normally, every person who increases his own liquidity, without increasing the aggregate margin between his total assets and his total liabilities, decreases the liquidity of someone else. Where he exchanges a less liquid for a more liquid asset this is obvious. It is just as true in the case where he substitutes a long-dated for a short-dated liability. A short-dated security is a better substitute for cash than a long-dated security issued by the same debtor, so that when the supply of short-dated securities is reduced and that of long-dated securities increased, the normal effect is to increase the demand to hold cash. It is most desirable in such cases to realise that the demand for increased liquidity does not come from the actual persons who are demanding more cash, but from those who, by their action in changing the form of their liabilities, have deprived their former holders of cash substitutes.

There is only one exception to the general rule that a person who increases his own liquidity decreases that of the rest of the system. If by paying off part of his short-term debt he so improves the credit standing of the remainder that it becomes a better substitute for money, the decrease in quantity may be more than offset by the increase in quality, and the liquidity of the remainder of the system may be increased. Conversely, if an increase in his short-term liabilities impairs their credit standing, the liquidity of the remainder of the system may be reduced. Broadly speaking, therefore, the system as a whole may become more liquid either when the short-term liabilities of the financially strong are increased or when those of the financially weak are reduced, and less liquid either when the short-term liabilities of the financially strong are reduced or when those of the financially weak are increased.

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[1] See *MacMillan Committee: Evidence*, Vol. II, p. 9.

Since the British Treasury can normally be regarded as an extremely credit-worthy borrower, it follows that any conversion of its short-term liabilities into long-dated securities tends to reduce the supply of money substitutes and to increase the demand for money. Further, since it is by far the largest single borrower on the short-term market, it must, unlike most other borrowers, take account of the effects of its policy upon the rest of the system. It must do this for two reasons: firstly, because of reactions upon its own position of changes elsewhere; and secondly, because the Treasury is not an independent entity, but merely represents one aspect of a government charged with the care of the interests of the whole community. It cannot, therefore, regard with equanimity loss or inconvenience caused by its actions in other parts of the system, even though no repercussions on its own financial position are distinguishable.

The effects upon the system of changes in the volume of Treasury Bills are greatly magnified by the fact that they are largely exercised via the banking system. Banks have much more definite conventions concerning the distribution of their resources than have other types of business concerns. The ratios which the larger London clearing banks now appear to regard as the lowest desirable are 10 per cent. of their deposits in cash and 30 per cent. in cash plus money at call and short notice, plus discounts. This means that discounts and short loans are normally regarded as complementary to cash only when the cash ratio is at or near its conventional minimum, while when the cash ratio is well above 10 per cent. discounts and short loans are regarded as substitutes for it.

The conventional minima are not in fact rigidly maintained. Even though the published total of the combined cash reserves of the clearing banks has never fallen perceptibly below 10 per cent. of their deposits, the apparent maintenance of this ratio has frequently been achieved only by resort to a greater or less amount of " window-dressing ", and the true ratio has at times fallen below the conventional minimum by an unknown amount, probably on occasions to well below 9 per cent. For the combined total of "quick assets" such methods of inflating the published figures are not available,[1] and these have frequently fallen well below the 30 per cent. level.

The contention of the banks[2] is that at such times the shortage of quick assets has a similar effect on their willingness to hold long-term assets—securities and advances—as a shortage of cash has upon their willingness to hold all assets other than cash. Unless, therefore, they are provided with additional cash reserves in substitution for the inadequate supply of bills, they feel obliged to restrict both advances and purchases of securities, thus raising their cash and quick assets ratios immediately by means of a fall in deposits, and later through an increase in cash rendered possible by a reduction in the demand for currency by the public. It is not clear how much additional cash is required to make up for a given shortage of bills—i.e., whether the 30 per cent. quick assets ratio is an unchanging minimum, or whether, for instance, a 29 per cent. quick assets ratio would be acceptable if accompanied by an 11 per cent. cash ratio.[3]

If the banks' contention is correct, that a shortage of bills compels them to restrict their advances and holdings of securities, one might hope to find some statistical confirmation of it in the movements of figures in the clearing banks' monthly returns. Unfortunately there are considerable difficulties in the way of obtaining such confirmation. In the first place, the banks' figures cannot react instantaneously to changes in conditions, and before the reactions to a temporary change become visible their cause may have disappeared; further, short-period comparisons between different months of the same year are rendered impossible by the very strong seasonal movement in discounts (mainly in consequence of a similar movement in Treasury Bills). It is not known how far the banks take this seasonal movement into account in fixing their minimum—whether, for instance, they would be more affected by a fall in the quick assets ratio below 30 per cent. in October than in April. It would seem *prima facie* reasonable that they should be caused some concern by a fall in the ratio below the normal for the time of year unless they expected the position to be adjusted before the next seasonal low; that is to say, a foreseen fall below 30 per cent. in a coming month should have an effect on policy before it becomes actual.

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[1] Since window-dressing consists of the apparent conversion of discounts and call money into cash.

[2] See *Colwyn Committee : Evidence*, pp. 106, 283 and 288. *MacMillan Committee : Evidence*, Vol. I, p. 33; Vol. II, pp. 176, 177. *Midland Bank Monthly Review*, September–October, 1933, and September–October, 1934.

[3] While the effect of a shortage of bills at a time when cash reserves stand at above 10 per cent. is clearly to tend to cause a rise (or check or prevent a fall) in long-term interest rates, its effect on short-term interest rates is less certain. If bills are regarded as a perfect substitute for cash so long as the cash ratio is above 10 per cent., the effect will be to drive down short-term rates of interest. But if, from the point of view of liquidity, bills are regarded as an imperfect substitute for cash, so that, say, an extra £1 Mn. of cash will compensate for a deficiency of £2 Mn. of bills, the effect on discount rates will depend on the degree of competition between the banks and on the elasticity of the supply of bills to the banks as a whole. If the banks are in competition, so that the supply of bills to each bank regarded separately is elastic, the short-term rate will be forced down as each bank endeavours to attract bills away from its competitors by offering higher prices. But if the banks combine to fix the rates, they will raise their prices only if they think this will have the effect of enabling them to purchase sufficient additional bills to restore their minimum ratio. If they consider that the supply of bills to them will be highly inelastic, they will instead endeavour to increase their cash at the expense of a further reduction in discounts by selling bills to the central bank (or, in London, by calling in loans from the market), thus raising short-term interest rates. Thus, if the banks have 11 per cent. of their deposits in cash and 17 per cent. in call money and bills, they can reach a satisfactory position either by increasing their bills and short loans to 18 per cent. of deposits, leaving cash unchanged at 11 per cent., or by reducing bills and short loans to 16 per cent. while raising cash to 12 per cent. Which they will choose will depend on calculations about the relative amounts of interest earnings sacrificed in the two cases.

Secondly, the banks change their own views on the question of desirable minimum ratios, both suddenly, in moments of crisis, and gradually over long periods. An example of the former occurred at the outbreak of the present war, when the cash ratio rose from 10.5 per cent. of deposits in July, 1939, to 11.8 per cent. in September, while discounts and short loans fell from 19.6 per cent. to 16.9 per cent. These movements occurred, not because of an increased demand for cash engendered by a shortage of bills, but because the minimum desirable cash ratio suddenly became a good deal higher than 10 per cent.

The gradual change in the banks' conventions over time is shown by an inspection of the figures over a period of years. Thus for the five years ending 1927 the average cash ratio was 11.7 per cent. and the quick assets ratio 32.7 per cent., while for the corresponding years of the following decade the average ratios had fallen to 10.7 per cent. and 32.1 per cent., respectively.

It would seem, therefore, that any comparisons must be made between :—

(1) similar periods of different years;
(2) years not far separated in time;
(3) periods when the banks' normal views as to the

relative liquidity values of cash and other short-term assets were not seriously disturbed. The following table shows the clearing banks' average ratios of cash and of short loans plus discounts to deposits for the three months when discounts are normally lowest (March, April, May) in each of the last seven years :—

	Clearing Banks' Ratio to Deposits	
	Cash %	Short Loans+Discounts %
March—May, 1933	10.9	23.4
1934	12.0	18.6
1935	11.2	17.9
1936	10.3	20.6
1937	10.2	18.8
1938	10.7	18.1
1939	11.1	15.7

These figures give some support to the contention that the banks hold a higher cash ratio when their other quick assets are low ; but to show that the inadequacy of the quick assets induces them to restrict advances and securities we need more than this. For when discounts fall, deposits necessarily fall correspondingly, unless the discounts are replaced by other assets. The ratio of cash to deposits will therefore rise automatically in years when discounts are low. Thus, if we start from a position where cash is 10.5 per cent. of deposits, and other quick assets are 20 per cent., a fall in the latter to 17 per cent. (of the reduced level of deposits), unless offset by a rise in other assets, would automatically raise the cash ratio to 10.9 per cent. To conform with the contention that a change in holdings of short loans and discounts has a tendency to cause holdings of long-term assets to change in the same direction (i.e., that short-term assets are complementary to long-term assets), it is necessary for the change in the cash ratio in the opposite direction to be greater than can be accounted for by this automatic rise ; if it is equal to it, this would be consistent with the view that short loans and discounts are merely neutral to long-term assets.

Of the three most marked changes shown in recent years (from plenty to scarcity of short-term assets in 1933–4, from scarcity to plenty in 1935–6, and from moderate scarcity to acute scarcity in 1938–9), the first two show changes in cash reserves appreciably, and the third slightly, larger than the changes to be expected to occur automatically as a result of a fall in deposits equal to the fall in short loans and discounts :—

	Cash Ratio			
	Expected		Actual	
	Rise	Fall	Rise	Fall
1933–1934	0.7		1.1	
1935–1936		0.5		0.9
1938–1939	0.3		0.4	

These movements are consistent with the view that the banks normally regard call loans and discounts as a substitute for cash when the cash ratio is well above the minimum.[1]

It remains to be shown that Treasury Bills have since 1918 formed so large a proportion of the banks' discounts that changes in their total seriously affect the banks' position. While no strictly accurate comparison can be made of the banks' statements after 1918 with those for 1914 and earlier years, an examination of such figures as can be compiled seems to indicate that between 1914 and 1927 bank discounts increased by about 80 per cent. Further, from the statistics quoted in the MacMillan report it appears that in 1927 more than half the total of discounts consisted of Treasury Bills. It therefore would seem that the total of commercial bills held by the banks was rather lower in 1927 than it had been in 1914. It seems clear that, but for the increase in the Treasury Bill issue, either the banks would have been compelled to show a fall in their " quick assets " ratio far more drastic than the decline from 43 per cent. to 32 per cent. of deposits which actually occurred, or the expansion in bank deposits would have been much less than the rise of 130 per cent. which occurred between 1914 and 1927, or both. It is probably true to say that the British banks were enabled more than to double their deposits after 1914 largely in consequence of the expansion of the Treasury's floating debt, which took the place of an expansion in the volume of commercial bills.

If, therefore, the Treasury had taken steps drastically to reduce its floating debt, it would have put the banks into a difficult position. Unless the volume of commercial bills had simultaneously shown a permanent expansion—a development which, though much desired,[1] did not in fact take place—the banks would have been obliged either to make a further drastic revision of their standards of liquidity, or to take steps to reduce the totals of their long-term assets.

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[1] In view of the many other factors involved, it is, of course, impossible to say that they afford *proof* of it, especially in view of the fact that from 1934 to 1935 and from 1936 to 1937 falls in the ratio of call loans and discounts were accompanied by falls in the cash ratio.

To this it may be objected that such a tendency towards deflation could easily have been offset by a suitable increase in the banks' cash reserves, induced by additions to the assets of the Bank of England.[2] To make such a policy fully effective, however, the Bank would have to buy either long-dated securities or gold from the public or from abroad. For the Bank of England to buy bills would increase the shortage of bills available for sale or pledge to the banks, and so, by intensifying the bill famine, necessitate still further creations of cash. In post-gold-standard conditions, for the Bank to buy gold from the Exchange Account would have a similar effect, since it provides the Account with sterling with which to pay off bills. In the days of the gold standard, it was clearly easiest for the Bank to offset the monetary effects of a reduction in Treasury Bills if the funding occurred at a time when gold was flowing into the country.

This conclusion is reinforced by a second contention, put forward with much force by Mr. Keynes in his cross-examination of Sir Richard Hopkins before the MacMillan Committee.[3] The argument is roughly as follows:—If, at a time when large quantities of funds are attracted to London, because it is the most convenient centre for short-term investment, a great proportion of the most suitable channels of investment disappear and are replaced by long-term securities, it must be anticipated that much of these funds will be diverted to other centres. The result will be that gold will flow out and the initial fall in short-term interest rates will be checked and reversed; the ultimate result will presumably be that, while long-term rates of interest may be forced appreciably higher, short-term rates cannot show an appreciable fall, unless the funding operation occurs at a time when the balance of payments is active and short-term funds can be withdrawn from London without causing an outflow of gold. In other words, the British government was in effect borrowing on short-term the foreign funds, the inflow of which had enabled the Bank of England to obtain or retain its gold ; and if the British government ceased to borrow these funds on short term, they would be withdrawn, unless an alternative investment (in the form of an increase in the available supply of commercial bills) appeared, and they could only be withdrawn without causing difficulty if their withdrawal was offset by an active balance of payments.

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[1] See *Colwyn Report*, p. 36. *Colwyn Committee: Evidence*, pp. 111, 623. *MacMillan Committee: Evidence*, Vol. II, p. 11.

[2] See *Colwyn Report*, p. 36.

[3] See *MacMillan Committee: Evidence*, Vol. II, pp. 9–11. Also *Barclay's Bank Monthly Review*, March–April, 1930.

If the validity of the foregoing argument is accepted, the course of events following upon a large Treasury funding operation between 1925 and 1931 would probably have been somewhat as follows, unless its effects had been offset either by the development of a large favourable balance of payments or by a rapid expansion in the volume of commercial bills, or by both.

Let us assume (what is by no means certain) that a substantial funding loan could have been issued without causing any very serious rise in long-term interest rates. The money subscribed to the loan might have come from any of four sources :—

(1) From the conversion of bills owned by foreigners. In this case the foreign owners of London funds would have voluntarily accepted the burden of decreased liquidity, and no problem would arise. Unfortunately it would seem that the owners of such funds attached a high value to their liquidity, and would be unlikely to invest them on long term.

(2) From new foreign funds attracted to London by the rise in long-term interest rates. This development would also have solved most of the problem, but was almost equally unlikely.

(3) From the conversion of the British banks' holdings of Treasury Bills. This would mean that these banks were prepared not merely to maintain their long-term assets despite a decrease in their short-term assets, but to see a substantial increase in them—in other words, that they regarded bills as a substitute, not for cash, but for securities. As we have seen, this is unlikely.

(4) From existing balances held in British banks. This last source is by far the most likely. The effect on the economic system of the repayment of Treasury Bills out of funds subscribed from existing bank balances would depend partly upon the identity of the holders of the bills and partly upon the use to which the funds subscribed would otherwise have been put by their owners.

(*a*) Balances used to repay bills held by the general British public. There is a strong presumption that funds received in repayment of bills, and unable to find a similar suitable investment, will be held on deposit account or otherwise inactive. If these funds were originally subscribed from inactive accounts there will be no change; if from active accounts, there will be an increase in inactive accounts at the expense of active accounts, and a fall in the velocity of circulation.

(*b*) Balances used to repay bills held by the banks. If the banks cannot find a suitable alternative short-term investment, total bank deposits will fall; if the banks regard bills as a substitute for cash and have to realise securities to increase their cash ratios, deposits will fall by more than the decrease in their discounts. In so far as the balances used to subscribe to the Treasury's loan and to buy the securities sold by the banks were formerly inactive, there is no decrease in active balances; but in so far as active balances are used, there will be a fall in the effective quantity of money in circulation.

(*c*) Balances used to repay Treasury Bills owned by foreigners. The initial fall in short-term interest rates will tend to cause these foreigners to withdraw their balances from London. The resulting drain on the cash reserves of the banks will compel them to offer increased deposit rates to foreigners in order to induce them to abstain from withdrawing their funds. If the funds subscribed to the conversion loan were originally active, there will be a fall in velocity of circulation.

The effects on interest rates would appear to be as follows:

(1) An initial rise in long-term rates as a direct result of the Treasury's loan.

(2) A possible secondary rise as a result of the banks' sales of securities.

(3) An initial fall in short-term rates of interest as a result of the reduced supply of bills.

(4) A subsequent rise in short-term rates (possibly confined to foreign-owned balances) in order to prevent foreign withdrawals of funds from London.

In total, therefore, it would seem likely that the net effect of a large-scale funding operation in the conditions ruling between 1925 and 1931 would have been a reduction in the total of bank deposits, and a fall in their velocity of circulation, a rise in long-term interest rates and a smaller, perhaps negligible, fall in short-term rates. There is even a possible case in which short-term rates would actually have risen (see p. 234, footnote 3).

So far we have seen the Treasury's concern for its own liquidity in conflict with its interest in the liquidity of the remainder of the system. We must now glance briefly at the third aspect of the question, that of the direct cost to the Treasury. The problem of comparing the interest cost of long and short borrowing presents certain difficulties. In the first place, it is misleading merely to compare short-term interest rates with the current long-term rates. Once a long-term loan has been raised, the borrower can ignore changes in long-term interest rates until such time as the loan falls due to be repaid. In making up his mind as to the relative cost of the two methods. he must compare the present long-term rate with expected future short-term rates during the whole period of the proposed long-term loan. It is sometimes said that he compares the long-term rate with the average of expected future short-term rates. This is only true if average is weighted in a particular way. A short-term rate of two per cent. for ten years, to be followed by a four per cent. rate for ten years, is obviously preferable now to a four per cent. rate to be followed by a two per cent. rate. What in fact we are comparing is the discounted present value of the expected future interest payments on the two methods of borrowing. The most convenient rate to use in discounting is the present long-term rate, though strict accuracy probably demands the use of the expected short-term rate for each period.

If we assume foresight on the part of the borrowing authority, we therefore have to compare the relative costs of long-term and short-term borrowing, not between the averages for the period lent, but between the long-term rate on a particular date and the various subsequent short-term rates, both discounted back to the date upon which the long-term loan could be raised. It may very well be that it would pay to borrow on long term at a particular date, even though long-term rates are expected to be persistently higher than contemporaneous short-term rates; and it is quite probable that the most profitable time for converting short-term into long-term debt is when current long-term rates show their largest excess over current short-term rates.

Until 1932, the apparent saving in interest charges by borrowing on short term was comparatively small. If, at the beginning of 1923, the Treasury had issued a long-term loan at 4½ per cent. to fund £400 Mn. of Treasury Bills (i.e., practically the whole of the tender issue apart from that required to even out seasonal movements), the extra interest cost, from 1923 to 1931, assuming that the operation had no effect on either long-term or short-term rates, would have been about £27 Mn., or an average of £3 Mn. per annum. The 1923 discounted value of the extra cost would have been about £22 Mn. The great bulk of the extra cost would have been incurred in two years—1923 and 1930. For the years 1925 to 1929 inclusive the cost would have been trifling.

The foregoing estimate, however, assumes that the demand both for long-dated and short-dated securities was extremely elastic, so that a large long-term loan could have been raised and large amounts of Treasury Bills funded without appreciably affecting either rate of interest. As we have seen above, in the conditions which existed between 1925 and 1931 a really large funding loan would probably have caused a substantial rise in the long-term rate of interest, though perhaps little fall in the short-term rate. The cost to the Treasury of such a rise in the long-term rate cannot be judged merely by the higher rate paid on the funding loan itself—indeed, it is possible that most of the rise might have occurred in consequence of the repercussions of the reduction in bills, and therefore would not have affected the rate paid on the funding loan. The Treasury would need to take account of its expected borrowing requirements for a considerable time ahead, and especially of its need to fund maturing Treasury Bonds (see p. 231). The total cost to the Treasury of a major funding operation would therefore have been very much higher than the apparent cost computed on the basis of the interest rates which actually existed during these years. Even if the Treasury had had regard solely to its own financial position, it might well have hesitated before attempting to reduce its floating debt to a figure merely sufficient to take care of seasonal fluctuations in revenue and expenditure. If we add to the cost of additional interest charges the probable fall in tax revenues following upon the higher level of long-term interest rates, the arguments, even on the narrowest grounds, against a drastic funding operation appear to be very strong.

We find, therefore, from the application of our three criteria, that the effect of the financial expedients and credit expansion of 1914–18 had been to place the British Treasury in a position where it was forced to choose between on the one hand continuing what it considered to be its own unsound position and, on the other, imposing a serious deflationary movement on the rest of the system, at the same time adding considerably to its own interest burden. It is not surprising that it found itself compelled to choose the former and temporarily easier of these alternatives, with results which were seen in September, 1931.

This frustrated desire of the Treasury before 1932 for an increase in liquidity by means of a reduction in its short-term debt to the public may perhaps help to explain what otherwise appears to be its irrational behaviour after that date. Although the Bank of England was no longer under compulsion to redeem its notes in gold at a fixed rate, and therefore one of the greatest difficulties in maintaining the solvency of the Treasury in the face of foreign withdrawals had disappeared (see p. 230), the Treasury proceeded enormously to increase the liquidity of its position. Between 1932 and March, 1938, the Treasury accumulated 42½ Mn. ounces of gold in the hands of the Exchange Equalisation Account, and during the same time enabled the Bank of England to add 48½ Mn. ounces to its previous holding of 28½ Mn. ounces. Meanwhile the price of gold had risen from £4 5s. per fine ounce to about £7, so that the value of the combined gold holdings of the Treasury and the Bank had increased from £121 Mn. to nearly £840 Mn.

That this expansion of the combined gold stock of the authorities had been rendered possible largely by an inflow of short-term funds from abroad is irrelevant from the point of view of the liquidity of the Treasury. A withdrawal of foreign funds would involve sales of gold by the Exchange Account in exchange for sterling, which would automatically go to reduce the size of the floating debt in the hands of the public. Thus even if the whole of the addition to the authorities' gold stock had been financed by an expansion in the floating debt in the hands of the public, and had subsequently had to be sold in order to permit the withdrawal of foreign balances, the final position of the Treasury would have been no weaker at the end of the operation than before the foreign balances were transferred to London ; while during the period when the balances were still in London, the liquidity of the Treasury's position would have been greatly increased.

By its method of financing its purchases of gold, the Treasury enormously exaggerated the automatic increase in its liquidity which the inflow of gold to London would in any case have caused. Of the increase of over £700 Mn. which occurred in the value of the authorities' gold stocks, only about £60 Mn. was financed by an increase of the floating debt in the hands of the public. Of the balance, about £320 Mn. was financed by long-term borrowing, £172 Mn. by expansion of the Bank of England's note issue and deposits, and the bulk of the remainder represented the profit on old and new gold holdings due to the rise in the price of gold.[1] A comparison of the position at the end of March, 1938, with what it had been ten years earlier makes clear the enormous increase in the liquidity of the Treasury's position :—

	March 1928	March 1938
Value of gold held by Bank of England	£158 Mn.	£540 Mn.
Value of gold held by Exchange a/c.	—	£300
	£158	£840
Total of Treasury Bills issued by tender	£443	£512
Ratio of gold to " tender " bills ..	35%	164%

The extreme conservatism of the Treasury's method of financing the purchase of gold involved some risk of inconveniencing the banking system whenever large quantities of gold needed to be re-sold. Since the sterling proceeds of such sales went automatically to reduce the total of bills issued by tender, at times when foreign money was being withdrawn from London (or rather, at the times of seasonal minimum following such withdrawals) the total of tender bills outstanding fell to abnormally low levels. The withdrawals of 1934 and 1938 were followed by falls to £358 Mn. in March, 1935, and to £346 Mn. in March, 1939. Unless these declines had been rapidly reversed, in 1935 by the reversal of the flow of gold and in 1939 by the needs of rearmament, the banks might well have been obliged to curtail their holdings of longer-dated assets.

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[1] See ECONOMICA, August, 1939, pp. 266–7.

In looking for alternative explanations for the Treasury's action in so greatly increasing the liquidity of its own position, we can presumably eliminate the possibility that it wished in this way to prevent the remainder of the system from securing a dangerous increase in liquidity, leading to the risk of inflation. After the inauguration of the "cheap money" policy in 1932 the whole trend of its policy was the other way. But in fact it ran a serious risk of a clash between the two aspects of its policy—on the one hand to increase its own liquidity and on the other to expand bank credit and force down long-term rates of interest. The conflict between these two policies was resolved only by the willingness of the clearing banks to submit to a marked decrease in their own standards of liquidity, by permitting a decline in their usual "quick assets" ratio and at the same time greatly expanding their holdings of long-dated securities. The Treasury thus secured the increase in its own liquidity partly by reducing that of the banks. There can be no doubt that the "cheap money" policy could have been carried out with much less friction and anxiety to the banks if rather more of the Treasury's gold purchases had been financed on short term and rather less on long term.

A more likely explanation of the Treasury's policy may perhaps be found in the relative costs of borrowing on long and short term. It is true that never before has the gap between long-term and short-term rates been so wide for so long a period. Since 1932 the gap between the Treasury Bill rate and the gilt-edged yield has rarely been less than 2 per cent., and has for long periods exceeded 2½ per cent. Nevertheless, the decline in prices of long-dated securities after 1936 was so marked that the Treasury's funding loans of 1935 and 1936 were made on very substantially better terms than could have been obtained later. If Treasury Bills were to be funded at all, it was more profitable to fund them then, even at the cost of several years of increased interest payments, than to wait until yields had risen and issue prices fallen. Whether or no the Treasury foresaw the rise in long-term rates, it can be congratulated on obtaining a substantial part of its long-term borrowings at the top of the market.

There remain two other possible explanations of the apparent immense increase in the Treasury's "liquidity preference" since 1932. One, which it is to be hoped may be rejected forthwith, is that the Treasury regarded a yearly average of round about £500 Mn. as "reasonable" for the issue of tender bills, and that, regardless of other circumstances, it viewed with distrust any tendency for the average to rise much above that level. Such an attitude would be as intelligent as for a business man to regard £1,000 as a "reasonable" figure for an overdraft, regardless of the amount of security he had to offer or of the liquid assets he held.

The other is that, as long ago as the spring of 1933, the Treasury foresaw the possibility that at some future date an abnormal expenditure would require urgent finance, and that this increase in potential obligations necessitated increased liquidity to offset it. The possibility of a war is, of course, one of the factors which the Treasury must always bear in mind. As long ago as 1925 Sir Otto Niemeyer, in his evidence before the Colwyn Committee, expressed apprehension as to the effect on short-term interest rates should the country be involved in a European war while carrying a large floating debt, and feared that "we should have great difficulty in renewing our bills and might be forced into very undesirable courses".[1] But it is not unreasonable to suppose that, at least since 1935, the Treasury has been increasingly concerned with this possibility, and has deliberately followed a course directed towards securing for itself a position of extreme liquidity—a course analogous to the building up of "war chests" in bullion by monarchs of earlier centuries.

In doing so, the Treasury has incurred the risk of inconveniencing the banking system whenever the gold, bought with money borrowed on long term, had to be sold and its sterling proceeds used for paying off short-term debt. Both after the temporary withdrawal of foreign funds in 1934 and the larger and more permanent withdrawals of 1938–39, the resulting falls in the volume of Treasury Bills issued by tender constituted a serious embarrassment to the money market and the banks. Had a large and permanent withdrawal of foreign funds occurred at a time when no exceptional government expenditure was necessary, the result might have been the almost complete disappearance of the Treasury Bill from the market, and probably a very substantial fall in bank deposits. To prevent this, either the

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[1] *Colwyn Committee: Evidence*, pp. 622–3.

Exchange Equalisation Account would have had to use the sterling proceeds of its gold sales to buy long-dated securities, or alternatively the Issue Department of the Bank would have had to release Treasury bills to the Account, replacing them with long-dated securities. Either of these methods, used on a large scale, would have had a disturbing effect on the securities market, and might have involved the Treasury in substantial losses due to the purchase of securities at temporarily inflated prices.

As it was, however, the temporary bill shortage of the spring of 1939 was rapidly remedied by the rising trend of rearmament expenditure. Later, the effects of the further withdrawals of foreign funds immediately before the outbreak of war were almost exactly offset by increased war expenditure, so that the total of bills issued by tender was almost stationary from mid-July to mid-September, while the total floating debt rose by over £100 Mn. The net effect of the Treasury's financial methods was thus that it borrowed on long term several years in advance sufficient money to finance the deficit for the rearmament period and the first weeks of the war, invested it temporarily in gold, and realised its investments at a large profit just when the money was needed. To its previous policy must be attributed the ease with which the war was financed during its first six months without either the issue of a war loan or any serious expansion of bank credit.

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The Drift Towards a Rational Foreign Exchange Policy

AN EXAMPLE OF ECONOMIC WAR ORGANISATION IN BRITAIN

By T. BALOGH

> "The horror of that . . .", the King went on, "I shall never, *never* forget."
> "You will, though," the Queen said, "if you don't make a memorandum of it".—*Through the Looking Glass.*

The Order in Council of July 17th[1] represents the institution of a system of almost comprehensive exchange control based on bilateralism. With this step the Authorities themselves have condemned their previous attempts at maintaining a sham-freedom. They have eventually, if grudgingly, accepted the main contentions of those who were not prepared to wait complacently until the force of foreseeable developments should hound them into conclusions which a study of the basic character of the war economic problem and of the experiences of other countries could have furnished.

The battle between dilettante empiricism and logical thinking in this—alas too restricted—field is over. And the canons of the well-bred would now impose silence. "I told you so" is never more resented than when it is patently true. If, then, I take up the cudgels once more and seem to belabour a dead mule it is for two reasons. First because the history of exchange control shows more abundantly than any other aspect of war-economic organisation the pernicious consequences of what Professor Toynbee has so aptly termed " adulation of ephemeral methods ". Secondly because even in their retreat from *laisser-faire* the Authorities succeeded in destroying most of the possible gains which might have resulted from the new methods of planned compulsion. A survey of this problem may, therefore, demonstrate that the lack of central war economic planning based on logical reasoning must reduce the efficiency of our war effort; and at the same time shed some light on the nature of the deficiencies in our governmental machinery responsible for the origination of policies, deficiencies which prevent and will continue to prevent the adoption of a rational war economic system, essential to victory.

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[1] S.R.& O. 1940. No. 1254.

PART I

Principles of a Rational Foreign Economic War Policy

> "In this country we distrust those who predict developments and advocate policies for their mitigation."—*Lord Halifax.*

The task of economic policy in war is to mobilise fully all available productive capacity and the accumulated real wealth of the country for the two basic purposes of (1) maintaining the supply of goods (and services) for consumption by the fighting forces, and by the civilian population, at the minimum level compatible with effectively sustaining the war effort, and (2) using all other productive factors for war purposes. The latter implies not only the establishment and maintenance of the maximum of striking force but also the accumulation and safe storage of maximum reserves—with due consideration to the factor of durability—of all the essentials in view of a probable enemy interference with production.

From this, the most general view of the tasks of economic war policy, certain axioms follow automatically:

1. The individualist competitive economic system—even in the rather corrupted form in which it existed before the war—cannot, without radical reforms and modifications, provide a basis for war economics. This system is based on satisfying actual (or expected) effective demand by way of an interplay of the price-mechanism and the profit motive.
2. The price-mechanism (i.e. the relative price system) as a criterion for the most efficient satisfaction of demand becomes inoperative if the demand of one buyer (the State) rises to a considerable proportion of total demand and is not limited by economic considerations (e.g. previous income or size of liquidable capital assets).
3. Price movements cannot be relied upon to limit the civilian demand in war time because with full employment, lag of taxation, etc., private money demand increases *pari passu* with the increased money demand of the State. The imposition of priorities (and rationing) is the only remedy against the development of a vicious inflationary spiral.
4. The production for current home consumption of all goods which are not essential and which are either

exportable or absorb an appreciable quantity of productive factors which could be used in essential production (civilian and military), must be prohibited.

5. The production of essential products above the minimum for current needs must be stocked until sufficient reserves are accumulated for any future contingency. Even *after* such reserves have been established there should be no question of permission to increase consumption so long as there remain the alternatives of increasing exports or diversion of the " surplus " factors to other (defence) needs.
6. The production of goods or services which, though not essential, cannot be exported and which do not absorb an appreciable amount of productive factors readily usable for essential or export production should not be disturbed, since any interference would cause an unnecessary diminution of the real income of the population.
7. Increased income taxes[1] cannot solve the problem of repressing consumption. This is not merely because of the inevitable lag between the increase in incomes and the payment of taxes but also because those who possess capital assets can always maintain their consumption by drawing on them. As, moreover, the individuals' scales of preferences in consumption are unlikely to coincide inversely with the need of the State for certain products (or rather for the productive factors absorbed by their production), the extent to which income would have to be suppressed by direct taxation in order to free a certain amount of productive factors is greater (i.e. a certain—possibly considerable—amount of unnecessary sacrifice has to be imposed) than if indirect taxes are imposed on the products needed. Even less sacrifice would have to be exacted and social justice could be better safeguarded if consumption were to be directly regulated by rationing and prohibition of production for civilian purposes needed for defence.[2]

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[1] Excess income taxes could only be considered as just if the distribution of income prior to the outbreak could be taken as a " norm ", as is clearly not the case.

[2] Indirect taxes would still be open to the objection at the beginning of this paragraph. The argument—in war time—against income tax is at an interesting variance with the doctrine that income tax reduces consumers' surplus less than an equivalent direct tax (cf. Hicks, *Value and Capital*). This variance can of course be explained by the fact that the task of peace economics is the provision of maximum satisfaction of effective demand of the individuals and that of war economics the provision of maximum striking power for the nation.

8. Such planning of production cannot be worked by private firms.

   The haphazard reduction of home consumption by taxation or other global measures causes unnecessary hardships and unemployment both for labour and employers, results in a chance (and probably unjust) distribution of available supplies and does not, necessarily, free the specific resources required. It also reduces efficiency in production as the reduction is not—for a long time—effected by closing whole factories but by reducing the scale of operations. This increases overhead cost per unit of output. In real terms this means that the labour and other resources represented by overhead cost are not released. Nor does this method guarantee that the resources freed will be used for increasing stocks or for exports if they are not required directly for defence purposes, and will not remain unemployed.

9. The solution lies in a compulsory pooling of firms by industries into holding companies under State control; these should have the right to borrow without interest from the Treasury so as to be able to finance the holding of stocks (and, as we shall see below, to execute export orders). The reduction of output can then be effected in such a way as to release more labour or equipment according to need. Certain factories could be taken over for essential production. Others could be held in reserve against air raid damage, or cleared of equipment to house essential works in case their buildings became damaged.[1]

   The financial pooling would permit a just distribution of the sacrifices which are unavoidable if resources are to be diverted, thereby removing a serious obstacle to the war effort.

   Increased efficiency of course also demands the standardisation over a large field of (both military and civilian) products. This should also facilitate the introduction of rationing.

10. The scheme implies a complete change of attitude and policy towards "unemployment". Men compulsorily displaced must be given their standard wages no matter what employment is given to them (including

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[1] Such Government-financed pooling would have permitted the establishment in peace time of the necessary war industries without fear of competition, which has done much in retarding preparations.

retraining). In Germany even soldiers' dependants are given compensation in accordance with the peace-time earning of their mobilised men.

These axioms can suitably be applied to the field of international economic policy in war time[1] :

1. All productive factors which cannot be *usefully* employed on essential defence tasks (including the provision for civilian minimum consumption) and whose products can be exported should be fully and continuously employed for export. The interpretation of the word " usefully " will depend on various considerations :
   (*a*) The urgency of defence demand.
   (*b*) The relative speed at which it can be satisfied at home and abroad ; the difficulties in the way of diverting labour from export to defence industries.
   (*c*) The size of foreign reserves.
   (*d*) The difficulty of procuring credits.
   (*e*) The strategic factor (shipping, air raid risks).
   (*f*) The terms on which essential products can be purchased in exchange for exports abroad as compared with their relative cost at home.

   The importance of safeguarding our foreign markets is very great. The risk of the establishment of protected domestic industries in countries formerly customers was substantial even before the war. If supplies cannot be maintained it will become a certainty. Experience shows that once secondary industries are established the vested interests created will be protected even if they are inefficient. Hence the loss of foreign markets is likely to be permanent or at any rate can be reversed only at the cost of a serious worsening of the terms of trade. If, therefore, defence demand is not extremely urgent (i.e. there is no extreme labour shortage) and the shipping position is not unfavourable, some sacrifice should be incurred (i.e. the peace-time export production continued and armaments obtained from abroad even at a somewhat more unfavourable price) so as to obviate the social cost involved in retraining and diverting the labour force and undertaking the new investment in defence industries.

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[1] For a more detailed demonstration of these axioms I have to refer to " How shall we pay for the war ? ", *Round Table Pamphlet No. 1 ;* and " Foreign Exchange and Export Trade Policy ", *Economic Journal*, March, 1940.

All *stocks* of exportable non-essential products available at the outbreak of the war should have been exported.

2. Measures must be taken to prevent a drain on the foreign reserves of the country:
    - (*a*) All unnecessary imports must be prohibited and other imports directly rationed because, in war conditions, price and exchange movements lose their efficacy. Some expedient must be found to permit the stocking of essential imports irrespective of the (permitted) level of current demand.
    - (*b*) Capital exports by residents and the withdrawal of capital by foreign creditors must be prohibited.
3. The war-time policy must ensure that whatever is exported secures the best possible terms relative to the imports which have to be bought.

These principles suffice to determine the character of war foreign trade policy.

As has been demonstrated elsewhere,[1] "individualist" methods of readjusting the foreign balance are, if not wholly impracticable, like deflation, incapable of fulfilling these requirements. In a situation where productive factors tend to be fully employed, and relative prices are strictly controlled for internal reasons, the free exchange market mechanism would not reflect the true comparative cost position of a country and therefore could not be relied upon to guide exports.[2]

Currency depreciation, unless so extreme as to lead to serious internal repercussions, is unlikely to achieve the full employment of all specific factors which could potentially be used to increase exports. The increased risks involved in foreign, in contradistinction to home, trade during hostilities, the low price-elasticity of home-demand in war time, and uncertainty concerning the future, reduce the effectiveness of the price-mechanism through which depreciation tends in peace time to increase exports (and to reduce imports or replace them by home products). Depreciation is, moreover, likely to worsen the terms of trade in commodities in which international trade continues because of the inevitable frictions in the adaptation of home to foreign prices.

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[1] Cf. footnote, p. 252.

[2] But even if it did, the very fact that labour shortage is threatening should discourage the Authorities from depreciating the currency, as in those circumstances only products in which the country possesses the highest comparative advantage should be exported.

Finally it would tend to dissipate rather than to increase stocks pending the opening of new foreign markets.

It has become accepted in the past few years that a country could improve its trading position if it succeeded in exploiting the imperfections of foreign markets and establishing a monopoly buying or selling position. Except for products of which the country in question has a monopoly control and which moreover are produced under monopoly conditions, this is only possible where measures are taken to prevent the supplying country from using the proceeds of its exports to the controlling country to buy in the cheapest market, or where foreign trade is either put under State control or is taken over by the State altogether. The maximum benefit from foreign trade can, therefore, be reaped only if exchange control is instituted on a strictly bilateral basis, i.e. if clearing agreements are negotiated. Where the whole of the foreign trade of the controlling country is conducted exclusively as a State monopoly—as in Russia—it does not much matter internally what rate of exchange is fixed. The "sterling" price of exports could then be adjusted suitably for each deal, with respect to each country, so as to reap the maximum advantage according to the urgency of that country's demand for our products and the strength of our bargaining power with respect to its exports. The same applies to imports.

If, however, it is desired to maintain at least part of the foreign trade of the controlling country on a more or less free basis—though controlled through licences—then the fixing of the rates of exchange becomes important. If then the clearing rate of exchange is so fixed as to overvalue the controlled currency in terms of the currency of its clearing partner a maximum benefit from the clearing agreement would automatically be obtained. Nor would this benefit be restricted to the present. The overvaluation of the currency of a strong buying country would be tantamount to a subsidy for the producers of the goods it needs at the expense of the consumers of the goods it exports to that country. This will mobilise a powerful vested interest in favour of the continuation of this state and lessen the dangers of the establishment of secondary industries.[1]

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[1] This procedure has a drawback: the urgencies of foreign countries' demands for our produce (partly caused by their necessity to sell to us—not having other foreign customers) are widely different. Some countries might possess alternative markets and suppliers. Others will have no possibility to replace us. To achieve maximum benefit we must fix rates of their

In order to lessen the frictions arising from this " bludgeoning " of the clearing partners several steps are necessary. First, in commodities in which the price, reckoned at the clearing rate of exchange, which overvalues sterling, is so high as to prevent the export of British goods in spite of the pressure exerted on the Central Bank of the clearing partner by the ever-increasing clearing credit[1] in its favour, a method must be found by which the " sterling " price of exports can be suitably lowered. This can be accomplished either by subsidies or by interpolating a State-financed agency or company between the home manufacturer (or the private export merchant) and the foreign buyer, an agency which would be empowered to sell at a (nominal) sterling loss abroad.[2] The resistance against straight subsidies by foreign

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currencies in terms of sterling proportionate to these differences in their " elasticities " (urgency) of demand. But the resultant cross-rates (that is to say the price of currency, e.g. of Brazil in terms of the currency of, say, Greece, reckoned over sterling,

$\frac{\text{milreis}}{\text{pound}} : \frac{\text{drachma}}{\text{pound}} = \text{(theoretically)}\ \frac{\text{milreis}}{\text{drachma}}$, may be different from the rates

quoted in either of the countries on each other. We might of course be able to prevail on them to change the structure of their rates to suit ourselves. This is the more unlikely as their commercial and financial transactions with one another will in all probability be governed by different factors from those which render the sterling rates on each of these countries advantageous for us. Thus if we wish to preserve the advantage implicit in these rates we must prevent them from selling pounds to each other—for otherwise we lose these advantages : the rate at which they sell pounds would be different from the rates we impose on them. This was the main argument in favour of bilateral clearing agreements. But there would be some advantage also in being able to preserve (at least partially) a solution which permits multilateralism, provided it did not lose us the benefits of bilateralism.

In the case of countries which produce only a limited number of staple commodities—and most countries with which we still have commercial relations would fall into this category—a solution can be found which gives us both benefits. The rate of general clearing should in these cases be established on the basis of the official rate in New York and the cross rates there ruling. This would enable us to conform, in such parts of our foreign trade as are not under direct Government control, to the U.S. exchange position and the relative exchange rates ruling there, which determine e.g. the rates of South American countries among themselves. Those commodities, however, which are purchased in bulk, should be dealt with on the basis of differential rates of exchange expressing our bargaining power. It may be asked why this complicated solution should be adopted when these commodities are in any case purchased by the State under monopoly conditions ; so long as we pay *low sterling prices* it might seem that the rate of exchange is of no importance. This objection overlooks the fact that it is of the utmost interest to us not only that we should pay low sterling prices but that the producers of the commodities we need *should receive high prices in their own* currency so as to render the production of these commodities in those countries relatively more advantageous than other production (for otherwise they will tend to increase their secondary industries). (The fact that we can under these circumstances conclude long-term production contracts, which eliminate the risk of price fluctuations, enables them to plan their production and obtain capital for its execution. This renders production of these commodities relatively favourable, even at " low " prices.)

As soon as the proceeds of the sales to us are credited in sterling (at a different rate from the general clearing rate) they would be amalgamated with the general clearing account.

[1] Incidentally the existence of such clearing credits in favour of our purchases eliminates the risk of a global default on exports, a risk which is in war time far greater than the risk of the bankruptcy of individual clients abroad.

[2] i.e. buy from the home producer at " cost " price and sell at a competitive sterling price abroad.

countries renders the first method less attractive. There is, moreover, a danger that subsidies may involve financial irregularities and be used to bolster inefficient factories. The second method would eliminate these dangers as competition at home need not be affected, though for other reasons a pooling of industry would seem a more appropriate policy. Where such pooling has taken place the War-Holding-Companies or the subsidiaries organised in each industry could properly take over the functions of such export companies.

Subsidies or the losses incurred by export companies can be financed either by a levy on the industry itself[1] or by a charge on the general Budget. The first method would seem to be rather uneconomic, under certain circumstances antisocial, and in any case an inefficient solution of the problem. An adequate amount could be levied only on commodities which have a large internal market. But in war time these ought to be exclusively essential commodities. Hence the levy would amount to nothing more than a regressive method of extrabudgetary taxation, so much in vogue lately.[2]

Priorities for export production will, of course, be a necessary element in all these schemes, for otherwise the pressure of home demand would stultify the policy. It would, however, be foolish to rely on export priorities alone for stimulating exports. Even if the exchange rate policy actually adopted is not the correct one—i.e. even if sterling is not overvalued in terms of other currencies—it is very doubtful whether a continuous full employment of all *potential* export industries could be achieved by such *negative* measures. The differences in comparative advantage of industries is very great, especially if *potential* export industries are included, as they should be in war time, even though in peace time they may have served the home market exclusively. If a policy of export priorities is coupled with measures to stabilise raw-material prices at a low level, then it is likely to result in an unnecessary worsening of the terms of trade (being the equivalent of a policy of depreciation varying in proportion not to the elasticity of demand abroad—which would maximise our gain—but according to the quota of these raw materials used in export industries, a wholly irrelevant basis). A policy based on export priorities or subsidies, or a combination of the two, cannot solve the problem of stocking exportable goods pending the development of the new export market, which always takes some time. (Much the same problem arises, of course, in connection with essential goods for the home market.) The same War-Holding-Companies could be used for that purpose and also effect bulk imports at monopoly buying prices.

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[1] In Germany certain industries were subsidised by a levy on another industry.

[2] Very much the same objection can be raised against currency depreciation as a method of export stimulation. It means nothing more than a flat subsidy financed by a flat "levy" on imports: a haphazard method of distributing the burden.

These considerations show that only a policy based on—

1. bilateral exchange clearing agreements which tend to overvalue sterling and which are discriminating (either by import commodities or by countries),
2. coupled with the establishment of export companies capable of organising the sale of export goods at competitive prices irrespective of sterling cost and the stocking of exportable goods pending sale,

can vouchsafe a continuous full employment of potential export industries and maximise the benefit from trade.

The character of exchange policy cannot, however, be determined solely by reference to current commercial transactions. A country such as Britain possesses an accumulated wealth in gold, foreign balances and assets, whose liquidation would permit imports without countervailing exports. It has also been the depository of foreign balances and a considerable foreign investment in British securities has taken place in the last two decades.

As far as the preservation of the value of our foreign assets is concerned the policy determined by considering current commercial transactions alone would seem to meet the requirements fully. It is obvious that, as the larger part of our foreign assets is in terms of sterling, as high a rate of exchange as can be obtained is desirable. It is obvious, also, that bilateralism would meet our war-time requirements much better than methods which in effect prevent us from bargaining separately with each country. Fortified by clearing agreements, the liquidation of our loans and other assets can be regulated. This would enable us to end the impossible situation which results from the practice of many debtors of first defaulting on their obligations and then using the accruing foreign exchange, not for resuming the debt service, but to repurchase at low prices securities depreciated by their own default.

The existence of foreign balances and assets in the country, on the contrary, does somewhat modify and complicate the solution. If the volume of these balances and assets is considerable and the rate of exchange is favourable to sterling (i.e. the terms on which we buy imports in terms of sterling are favourable, and therefore the internal price is, relatively, low) the liquidation of these balances will be very costly. If, however, the rate of exchange is allowed to depreciate and nothing is done to delimit the use of these balances (i.e. if they can freely be used in payment for British exports) then all the unfavourable consequences of a depreciation will ensue (except that that part of the worsening of the *terms* of trade which is due to the *cheapening of exports* is borne by the creditor, but the *country* will lose the proceeds of the exports). If, moreover, these balances can be transferred internationally by holders, bilateralism will break down, even if the country from which Britain imports has an exchange control: for the exporter, instead of invoicing in his own currency, will try to invoice in sterling, which can be sold against "free currencies", and will base his sterling price on that rate of exchange at which he can obtain "free currency" against sterling, i.e. the lowest ruling rate of exchange for sterling in a free market. This will tend, therefore, to depreciate sterling further. The prices of these imports will rise against us.

Hence a segregation of "commercial" sterling—i.e. sterling originating in current commercial transactions—from "financial" sterling is necessary if a rational exchange policy is to be followed. At a later date or in exceptional circumstances alleviations could be granted from these restrictions. There must, however, be a further segregation—according to countries. If the nationals of one country could transfer their balances or assets to the nationals of other countries, then (even though the segregation of financial and commercial sterling had taken place and therefore their multilateralism could not interfere with the bilateralism of the clearing agreements and thus eliminate the possibility of discrimination) there is a grave danger that nationals of countries with which Britain has a relatively strong bargaining position will transfer their balances and assets to countries whose relative position is stronger. This may well prejudice the success of any clearing negotiations. Hence there must be a segregation, both according to origin (commercial and financial) and according to ownership, of all foreign balances and securities in this country. The several policies can be listed and graded according to severity towards the foreign owners (several of which can be applied simultaneously if the segregation according to the nationality of the owner has been carried out).

The possible policies can be listed according to severity of restriction on foreign-owned sterling balances[1]:

(*a*) Foreign-owned sterling of whatever origin could be converted into foreign exchange at the official rate by the Control.

(*b*) The conversion of foreign-owned sterling into foreign exchange would not be allowed, but the balances could be used freely for payments in Britain and also be sold to foreigners of *whatever* nationality (except in the case of nationals of those countries with which we have clearing or payments agreements).

(*c*) The conversion of foreign-owned sterling of whatever origin would be guaranteed at a *fixed* rate different from the official rate.

(*d*) The conversion of foreign-owned sterling into foreign exchange would not be guaranteed at a fixed rate and it could only be used

  (*i*) for paying for certain exports and debts as well as investment in Britain;

  (*ii*) for paying for "additional" exports and other specified purposes:

but could still freely be sold to foreigners of any nationality.

(*e*) The conversion of sterling owned by foreigners could be guaranteed at the official rate *if* originating from current transaction (*i*) into a free currency, (*ii*) into the currency of the foreign country with which the transaction had been concluded which gave rise to the transfer of sterling to the foreigner.[2] Those balances which originated from past transactions are treated separately and differently either by (α) giving foreign exchange for them at a fixed but lower rate, or (β) refusing to guarantee their conversion into foreign exchange and dealing with them as under either (*b*) or (*d*).

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[1] The investment in British assets and securities should be encouraged.

[2] If that currency is "controlled" this means in effect that clearing takes place. Otherwise there is no difference between (*e*) (*i*) and (*e*) (*ii*). There would be no sense in quoting differential lower rates.

(*f*) Strict bilateral clearing agreements are concluded at fixed and discriminating rates and " financial " balances are separately dealt with. These measures can be varied.

Discrimination does not mean outright " blocking ". " Blocking " arrangements should be negotiated separately: in case of certain commodities where our bargaining position is strong we could pay in blocked sterling, i.e. we could arrange for a credit under favourable conditions. In those cases we should be willing to give exchange guarantees.

The foregoing seem to demonstrate that both the aim of securing maximum benefit from current transactions and the task of conserving as much as possible the foreign reserves of the country demand the imposition of strict exchange control and bilateralism, combined with such reorganisation of foreign trading as would permit the introduction of a collective element into the individualist competitive system of trading. As soon as these measures are completed and the position is under control, a policy of liberalisation, of increasing but controlled multilateralism can be begun. As the control would be continuous no unexpected reverse need be feared.

It is true that the " international " character of sterling would be abandoned and a series of " special " sterling species would be established, varying in value according to the uses permitted. But the very fact that the control is so strict would enable the Authorities to permit the establishment of free sectors very much like " free ports " in relation to customs. Hence, as the possibility of leakage would be all but excluded, very much more liberal policies could be followed in isolated sectors and thus the invisible exports of the country maintained.[1]

PART II

The Method of Control

Prior to the war, in private and in public, assurances were profuse that the preparations for the immediate establishment of a comprehensive system of war economics were complete, that once the day of need arrived the mobilisation of the whole economic potential would be immediate. Quite apart from the fact—the discussion of which does not fall within the compass of a review of economic measures—that legitimate doubt might be entertained as to the date when such mobilisation should have been regarded as necessary, these assurances now seem to have been somewhat rash.

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[1] The establishment of bilateral controls in conjunction with centrally controlled export companies would also permit of the maintenance of the control over commodity markets even if the transhipment through Britain had to be discontinued.

In fact—at least as far as opinions can be formed on the basis of published material, which is necessarily incomplete and may to a certain extent be misleading—it would hardly be an exaggeration to maintain that most of the measures taken were implicitly acknowledged by succeeding regulations to have been incomplete, some inappropriate, and some, not the least important, inimical to the interests of the country. This is all the harder to justify as the problems facing this country in the late summer of 1939 closely resembled those which had faced Germany at certain earlier stages of her race for arms. Even if the Authorities mistrusted deductive reasoning, they were in a position to learn from the experience of Germany, especially as the Nazis and Dr. Schacht did not operate from a theoretical base but "solved problems as they arose".

There was a prelude to the establishment of control. And in the first ten months of war not less than four sharply delimited phases can be distinguished. Each of these shows an increase in the degree of control, a fact strongly suggesting that the Authorities had either failed to recognise the gravity of the situation at the outset of the war, or at least had shown themselves incapable of devising satisfactory measures to safeguard the foreign reserves of the country. Finance—even external finance—is rapidly losing its importance in these days of more acute preoccupations, of the growing completeness of controls and of increasing sympathy and willingness to participate in sacrifice in those countries on which, in the main, we have to rely economically. It is rather as a symptom of a far deeper-seated malaise that this dogged resistance to the reconsideration of past policies and methods is remarkable and disquieting. It is customary to argue that the stricter measures could not have been applied for (mainly international) psychological and practical reasons. This line of argument is not convincing. The bargaining power of the Allies was far greater at the outbreak of hostilities than it is now. And a strict control would not have excluded liberal exemptions in cases where it appeared opportune.

I. Prelude

> "If it were done when 'tis done it were well
> it were done quickly."—*Macbeth.*

The dollar exchange rate fell from roughly \$5 to the £ in the beginning of 1938 to below \$4.70 after the Munich crisis had made the dangers of the European situation manifest. This fall was caused and accompanied by a very large export of capital. At the same time the slowly increasing rate of rearmament resulted in a direct increase of imports and tended by its general effects to worsen our balance of trade. The Tripartite Agreement expressly provided for such contingencies. The successive French devaluations were undertaken with the full consent of the American Authorities. The British Treasury did not avail itself of this opportunity.

From March 1939 onwards the Exchange Equalisation Account set itself to resist any further depreciation of the pound. The \$ rate in London was held rigidly at 4.68¼. When speculation in the forward market forced up the three-months rate from 1¾% at the beginning of August to 2¼% on the 18th, the Account extended its operations to the forward market and stabilised, at further considerable losses, the forward premium on dollars. The disintegration of the so-called sterling block could not be prevented by these efforts to stem the depreciation of the pound. The Scandinavian countries deserted first, taking with them most of their reserves at the high rate of exchange. The Argentine peso followed suit. Japan and Portugal and the Empire remained attached to the pound. The intervention was suspended only on August 25th, 1939. Sterling thereupon fell to \$4.10. In the last week prior to the declaration of war violent and unnecessary fluctuations occurred between \$4.25 and \$4.40 to the pound. The Chancellor of the Exchequer subsequently[1] defended the depreciation of the pound to 4.04 middle (and its further reduction to 4.03 middle on September 14th, 1939) as a carefully conceived readjustment of the external value to the "true" value of the pound. It is difficult to see what the Treasury affected to mean by that expression. Did they wish to exclude or include capital export? It would in any case be interesting to know how they arrived at an assessment of this level, especially in war time, when the "normal" price mechanism is completely paralysed by rationing. But whatever they meant it is obvious that *if* the depreciation of the pound was justified at any time *after* the institution of exchange control it was much more justified *prior to* the, at first somewhat ineffectual, prohibition of the export of capital. Then it would have at least tended to safeguard the foreign exchange holdings of the country.[1] But the level chosen was *below* the level to which the flight of capital had reduced sterling. How it could have been justified by any appeal to any sort of "norm" passes rational comprehension. The whole incident is the more amusing —intellectually—as such utter silence accompanied the announcement on June 8th, 1940, of the appreciation of the pound from somewhere below $3.25 to $4.03 to the pound, as far as exports other than those already specified in April, 1940, were concerned. In the meantime our unfavourable monthly balance had increased from an average of £36 Mn. early in 1939 to over £60 Mn. in 1940, wages had increased by some 10%, and the discrepancy between dollar and sterling prices by some 25%. No one except the Government would under present conditions refer to the unfortunate purchasing power parity. But as the Government did, how can this reversal of its policy be justified? How can the 4.03 parity, if it was a "true" value in September, 1939, remain so in June, 1940? But perhaps the "practical" and "psychological" considerations had changed. Or, having paid a stiff price, the Treasury had begun to learn its lesson.[2]

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[1] *The Times*, April 10th, 1940.

II. The First Months of Control

"He rode off in all directions at once."—*Grimm's Fairy Tales.*

Democratic countries are supposed to suffer from the excessive slowness of Parliament to face up to problems. No such handicap was experienced in Britain. The required empowering bills were passed in hours rather than days. The Emergency Powers (Defence) Act, the Import, Export and Customs Powers (Defence) Act, and the Currency

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[1] Once depreciation was decided upon the rebound which caused an appreciation from 4.10 to 4.40 ought to have been used to recoup some of the losses in reserve.

[2] It seems questionable whether the magnanimity shown to the international bear speculation against sterling, which reaped considerable profits at the expense of the Treasury, made the requisitioning of foreign balances and securities easier.

Powers (Defence) Act are so generously drawn that no Authoritarian Regime could boast of wider discretionary powers.

The theoretical considerations in the first part of this paper show abundantly (what simple common sense would also have suggested) that a very strong central executive organ possessed of a large and practically experienced, as well as theoretically well trained, planning secretariat would be essential if the transition from the hybrid *laisser faire* system in which we lived into a full war economy was to be achieved without immense frictions, loss of efficiency and weakening of the war effort. The comparative lack of secrecy which the Nazis thought themselves able to afford after 1937, i.e. as soon as they had reached the stage of minimum armaments required in a war with first class powers, and had freed themselves from the weakness imposed on them through the demilitarisation of the Rhineland, should have enabled the Treasury to make a tolerably accurate estimate of the task we were confronted with. Mr. Churchill, long before he joined the Chamberlain Government, and others, had had no illusions on that score. Even then an estimate based on the most optimistic hypothesis for us ought to have suggested that, whatever superiority in long-run economic potential the Allies possessed, only a determined use of all available resources—including foreign reserves enabling us to draw upon American productive capacity—could equalise in the short run the considerable advantage in actual striking power which the Nazis gained by having mobilised their inferior productive power for the provision of armaments fully four years before the declaration of war.

The control of foreign economic relations was entrusted to a host of Departments, some newly organised or so hurriedly expanded as to be as good as new. The Board of Trade organised Import and Export Licence Departments, the latter to work in close co-operation with the Ministry of Economic Warfare so as to prevent any essential materials from reaching Germany. The Board of Trade in conjunction with the Ministry of Supply was to control (or at least watch over) prices. The Ministry of Supply was given, together with the Ministry of Food, control over specified products, the import and export of which they had to regulate (or undertake themselves). The Bank of England was entrusted with the working of the Exchange Control and remained a powerful factor in determining financial and monetary policy. Co-ordination among these multifarious organs—some of which, as we shall see presently, were inextricably mixed up with private interests and could hardly be expected to work smoothly without supervision—was supposed to be provided by the Treasury. But the Treasury was understaffed—and therefore overworked—even in peace time. And such expansion of its staff as was hesitatingly permitted was not allowed to extend to the heights where policy originates.

The consequences were probably inevitable. (1) As far as exports were concerned the difficulties of clearance were immense, and the delays and uncertainties discouraged both the foreign clients and the exporters. This tendency was aggravated by the failure either to introduce rationing or to restrict home demand by adequate tax measures (though, as we have seen above, even drastic taxation could not have accomplished a real reduction in home demand without rationing). Many of the home trades, after the setback due to evacuation, black-out, etc., began to expand, or rather, failed to shrink sufficiently to promote exports except for those branches, such as building, where direct prohibitions caused unemployment. Such unemployment as was caused was not accompanied by adequate measures for diversion into defence production. Excessive home consumption and the dissipation of stocks which ought to have been requisitioned or exported were further stimulated by the sudden reversion of the Bank of England to *laisser faire* methods of " deflationary " readjustment in the midst of controls and budgetary inflation. The bank rate was raised to 4 per cent. on August 24th. On the outbreak of war, moreover, an indiscriminate flat war risk premium was put on stocks, which raised the effective rate of interest to over 10 per cent. A rise in the bank rate could not be expected to attract foreign lenders. Domestic lenders to foreigners were forced to call in their credits by the Defence Regulations (September 3rd). Thus the general effect on demand of a rise of the rate of interest once capital issues were controlled was negligible. The only appreciable result of this measure was a pressure on stocks. But stocks should have been preserved at all cost.

It was, presumably, the fear of inflation which dictated this policy. But, unaccompanied by more direct controls, the measure was calculated to promote excessive inflation *later* at the cost of using existing stocks. The same urge must have been responsible for the price-policy in this period, which also worked in the direction of dissipation of stocks not only at home but also in the export trade. Instead of controlling inflation at its source or canalising it in innocuous channels through a direct regulation of consumption and investment, resort was had to the old game of altering the temperature by changing the thermometer. Prices were to be maintained at all costs. Such exports as remained were thus thrown away at below replacement cost by this combination of exchange depreciation and price stabilisation. Exactly the opposite policy would have commended itself. (2) The *import* policy was hardly happier. Its execution was entrusted to:

(*a*) The raw material controllers under the Ministry of Supply.
(*b*) The Ministry of Food.
(*c*) The Board of Trade Import Licence Department.

Owing to the peculiar constitution of the Ministry of Supply Controls[1] adequate restriction of imports could hardly be looked for. The continued adherence of the Board of Trade to its tradition of trying to increase exports by permitting imports, also militated against a proper handling of the problem. Finally the system was based on the principle of permitting all imports unless prohibited, instead of the reverse. Such restriction of imports as was practised caused in many instances a violent rise of prices. As import licences were not sold by the Government at competitive prices, this meant in the case of consignments that the loss of foreign exchange was greater than if full imports had been permitted, or, in the case of purchases abroad by residents and as a lesser evil, unjustifiable profits. Shipping space was of course saved. The loss of foreign exchange due to the failure to control imports effectively in the first six months of the war has been put by one of the foremost financial experts at not less than £50 million. There are reasons to suspect that even this is an underestimate. How much exchange was lost by the failure to increase exports and obtain satisfactory prices is impossible to estimate. If the possible requisitioning and export of stocks of luxuries is taken into account it could hardly be much less. It is melancholy to reflect that the preservation of our foreign exchange reserves was mainly practised first by a strict control over pre-emption of products useful to the enemy in countries contiguous to Germany; and secondly over the assembly of adequate stocks of essential raw materials (which had been previously made difficult in many instances —rubber, copper—by restriction schemes to which yet another Government Department was in effect a party). This control seems to have been effective because it was exercised not over "outside" interests but over Government expenditure. Another field in which control seems to have been strict appears, according to American figures, to have been the orders for arms and machines in the United States, then not encumbered by their own rearmament plans. (3) Exchange Control. The control over foreign payments was instituted on September 3rd, 1939.[1]

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[1] *The Economist*, Feb. 17th, 1940.

The official rates of exchange were fixed by the Bank of England on September 5th, 1939, on the basis of a dollar parity of 4.04 middle, i.e. appreciably below the last "free" quotation. This was subsequently reduced to 4.03 middle. The order required private holders of gold and foreign exchange to surrender it to the Treasury at the official rates.[2] The currencies concerned were designated by the Treasury in a Minute dated September 4th, 1939. The implications of this depreciation of the official sterling rate have already been discussed.

Even more important, however, were the consequences of the failure to tighten immediately the rules concerning the transfer of sterling to foreign accounts and those concerning the transfer of securities to and from foreigners. These loopholes, together with the absence of any regulations permitting a check on export and import[3] prices, gave a free rein to the export of capital by residents. The whole process was much aggravated by the decision of the Authorities not to interfere with the sale of sterling balances or assets owned by foreigners to other foreigners of any nationality, or with their use for fulfilling obligations in Britain.

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[1] The registration of foreign assets in specified foreign currencies was ordered as early as August 26th, 1939. No registration of sterling loans was ordered and foreigners could continue to repurchase them at current prices, depressed as they were by the financial measures.

[2] The penalty for evasion does not appear to have been sufficiently promptly applied. The first prosecution started only after some time.

[3] The empowering regulation was issued only on September 21st, 1939 (S. R. & O., No. 1251 of 1939). It was not enforced effectively for some time. Even now doubts may be raised on its efficacy.

The international and unitarian character of sterling was to be maintained at all cost. The word " blocking " assumed an evil, almost obscene, connotation and all suggestions for a stricter control seemed to consist of " blocking ".

The non-enemy alien therefore was allowed to remit out of the country by sales abroad :

(1) Sterling balances which were in his possession at the outbreak of the war.

(2) Sterling balances which he acquired by
  (*a*) exports to this country ;
  (*b*) liquidation of his securities and other capital assets, and profits and reserves of his direct investments and any other income (interest, royalties, etc.) ;
  (*c*) any loans granted to him by a bank or private individuals.

As foreign holders were not given foreign exchange by the Control, there was a steady supply of " free " sterling on the overseas markets. Since foreigners could sell to one another irrespective of nationality the rate of " free " sterling was uniform in all foreign countries possessing exchange markets. The steady flow of liquidations depressed the " free " rate below the official rate. The discount at one time in October was as high as 7 per cent. The " international " character of sterling was being maintained—at a cost. The cost consisted in the fact that British exports tended to be invoiced in sterling even more regularly than before ; exporters could thus quote higher sterling prices or rather could undersell in terms of foreign exchange those of their competitors who invoiced in foreign exchange and therefore had to deliver the proceeds of their exports to the Control, in accordance with the Defence Regulations, at the higher, official value of sterling. But by invoicing in sterling to foreigners who obtained from other foreigners the funds necessary for paying for British exports, the Control obviously lost the proceeds of British exports. British importers, on the other hand, tended to buy in terms of foreign exchange, thereby obtaining the necessary funds from the Control at a better rate than they would have been forced to pay in sterling which foreigners could only sell abroad at a discount. This meant that there was a tendency for the Control to lose foreign exchange for imports without gaining the proceeds of exports.[1] But in many trades sterling invoicing was customary. Moreover, all exporters with currencies that were controlled—and there were few currencies which were not controlled—preferred payment in sterling which they could sell against dollars. Hence in spite of the contrary interest of the British importer there was an additional fairly heavy supply of sterling originating from British imports. This supply was increased by the failure of the Authorities to perceive that as long as sterling remained an "international" currency, the permission to transfer sterling to foreign accounts was identical with permission to buy foreign exchange from the Control—except that it tended to depreciate the "free" quotation. It was not at that time conceded that such depreciation, especially as it was coupled with a policy of keeping sterling prices as stable as possible, had unfavourable repercussions on our balance of foreign payments. Permission for nationals to transfer to foreign accounts was very much easier to obtain than foreign exchange because the ultimate decision was left to the so-called Authorised Dealers. The form E.1, which was necessary before doing so, was much less detailed, not numbered and did not require to be made out in duplicate. It was mainly devised to guard against transfers to enemy nationals. Thus even though the Treasury strenuously denied any discrimination against the invoicing of imports in foreign exchange such discrimination did persist. In this way the loss of exchange to the Control due to the first reason was aggravated by the unfavourable internal consequences of depreciation to the economic system as a whole.

The loopholes in the Exchange Control in the first two or three months after the outbreak of hostilities were made even wider by the peculiar policy followed with respect to the personnel appointed to manage this, one of the most central and at the same time most complicated pieces of the control machinery. The Exchange brokers, having lost their livelihood, were chosen to supplement the staff of the Bank of England in fulfilling its new duties. They had previously been acting mainly as automatic telephone centres. The actual execution of control was entrusted to so-called Authorised Dealers. All joint stock banks in Great Britain were given this character and "oversea" joint stock banks were entrusted to deal with the currencies of the countries with which they had connections. The greater proportion of these banks and most of the branches of all of them had never dealt in foreign exchange before. The private bankers who had in the main specialised in this business were excluded from their number. They were later given powers to deal with applications for sterling transfers (E.1). The intricate arrangements about commissions[1] on the one hand, and the fact that control was left in the hands of competing banks interested in the volume of their business on the other, resulted in a further weakening of the control[2] and also tended to increase the importance of sterling invoicing of imports, thus exerting a further depressing influence on the " free sterling " rate.

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[1] The foreigner would undoubtedly have charged higher prices in terms of sterling.

Finally, no effective control was exercised on payments to countries which were members of the sterling block. As the strictness of the regulations and administrative ability in these countries (including not only the Dominions but also Irak and Egypt) was rather varied, further not negligible loopholes were opened in the exchange control. Expert opinion puts the loss in foreign exchange on this score at another £50 millions in the first six months of the war. This estimate in all probability errs on the low side.

III. THE STRATEGIC RETREAT FROM THE " INTERNATIONAL " STERLING

(a) *The attempt at a compromise solution.*

> " I know what you are thinking about, said Tweedledum,
> but it isn't so, nohow ".—*Through the Looking Glass.*

The process of tightening the foreign exchange control and solving the foreign trade problem began almost immediately after the first regulations had been issued. On September 14th an attempt was made to solve unilaterally the problem of payments to France. No unification of the Allied Controls and establishment of a common policy took place. On September 21st powers were taken to control the proceeds of exports without attempting to deal with the problem of prices. On October 4th a circular was sent to authorised dealers requesting them to discourage the invoicing in U.S. dollars of imports from other countries. Imports from countries with restricted currencies were to be invoiced either in sterling or in the currency of the exporter. This attempt at bilateralism was repeated by a further exhortation on December 14th to the British Chambers of Commerce. It was rendered completely nugatory by the continued permission to foreigners to sell sterling balances to aliens of any nationality.

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[1] Authorised and other bankers were allowed to charge $\frac{1}{8}$% commission to the public. Authorised dealers handling the order of a non-authorised banker were given $\frac{1}{32}$% commission by the Bank of England, but could not charge anything to the non-authorised bank, thus losing $\frac{1}{16}$%.

[2] The exemption of " pre-hostility " contracts from control or rather the lack of regulation about proof concerning such transactions had a similar effect. There were violent denials that capital export had taken place. The rate at which privately-owned foreign securities were taken over (the first, very haphazard, list was published in February, the second, and more comprehensive, in April), does not bear out these denials.

A beginning was made with the control of credits in sterling to the account of foreigners by requiring the production of documents prior to effecting the transfer (November 23rd). But the procedure was still not made identical with, nor as severe as, the applications for foreign exchange. Some beginning was also made at least in the collection of statistics of dealings in non-" specified " currencies. The new regulation also gave power to the Treasury to buy foreign exchange and gold holdings by compulsion. Two further amendments were made in the regulations governing security transactions between residents and foreigners.

This phase of the Control closes with the batch of regulations, amendments and instructions issued on December 22nd, 1939, and January 3rd, 1940, to come into effect on January 8th, 1940. These regulations at last made the requirements to be fulfilled in the case of transfers of sterling to the account of foreigners identical with applications for foreign exchange. Once the foreigner obtained sterling, he continued to enjoy the freedom outlined above. At the same time credits to foreigners were made more difficult to obtain. Finally a strict clearing agreement was announced between this country and France. But no attempt was made to arrive at a unified policy or full agreement over the principles of war controls. Nothing was heard about agreements with other sterling countries concerning the establishment of a joint control through clearing agreements, though articles in the *Economist* suggest that some agreement was arrived at in respect of the sterling balances of these countries. And the control exercised in these countries, payments to which from this country were completely exempt from restriction, showed considerable differences in strictness. The Canadian measures passed in October surpassed in strictness the contemporaneous British regulations. For example, they prohibited the sale of commodities on long credits or at below fair price. No such provision was enacted in Britain.

The system thus established remained in force until the "freedom" of sterling was made increasingly unreal by measures prohibiting its use for the purchase of a growing number of British products. This represented a compromise between control and bilateralism and the wish to avoid what was still erroneously regarded as "blocking". The consequences of this failure to deal with the basic problem continued to weaken the reserves of the country, though the semi-official statements issued from time to time were finally strenuously re-emphasised in Parliament by the Chancellor,[1] who maintained that the turnover of the free market was trivial and that no export of capital had taken place. The subsequent complete change of policy throws in this connection an interesting light on the effectiveness of Parliamentary control by questions.

More fundamental were the changes in import and export policy during this period. The control over all foodstuff imports was assigned to the Ministry of Food. The import of a growing number of articles was controlled and the quotas were slowly though not sufficiently reduced. Finally the outcry caused by the very sharp slump of British exports led to a growing agitation for remedial measures. The procedure necessary for obtaining export licences was speeded up. The Board of Trade and the Ministry of Supply attempted to encourage exports by giving raw material priorities to firms which maintained their foreign trade. As this did not seem to produce adequate results the new President of the Board of Trade formed an Export Council.[2] Apart from representatives of all Ministries concerned, prominent business men were invited to participate, a few of whom were to give their full time services. A statement issued[3] announced that the Government would not hesitate to apply the most unorthodox methods in order to expand exports. The first months of the Council were taken up by the formation of Export Groups—with no powers except persuasion. The priorities for exports, however, were made more effective. Some recovery of exports did in fact take place. The problem of pricing and of stocking was not touched.[1]

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[1] *The Economist*, April 13, 1940, p. 692.

[2] *The Economist*, Feb. 10, 1940, p. 244; March 1, 1940, p. 410; March 16, 1940, p. 453.

[3] Cmd. No. 6183, 1940.

(*b*) *The Road to Bilateralism.*

"Contrariwise, continued Tweedledee, if it was so it might be; and if it were so, it would; but as it isn't it ain't."

The first step in the enforcement of strict bilateralism was taken in March, 1940. A new regulation[2] was issued prohibiting the export of certain important commodities to free exchange countries except against payment either in the currency of the country to which the goods were exported or in sterling obtained from an authorised dealer (if the export was effected against sterling bills the Authorities had to be satisfied that the payment would eventually be effected by these methods). In May diamonds were added to the list of "specified" products.

In so far as the commodities "specified" were products of a colonial and luxury type, the price elasticity for which is low, this measure (which represented an appreciation of sterling by roughly 2 per cent.—"free sterling" was then quoted at 3.94[3])—was a step in the right direction even from the point of view of exchange *rate* policy. Prohibition of the use of British exports to enable foreigners to withdraw their capital was obviously a step essential for the preservation of our foreign resources.

But the Authorities did not take any further steps. Hence the anomaly that foreigners could sell their "free" sterling to each other continued. As a large part of the demand for free sterling was cut off the rate slumped first, to roughly 3.70, afterwards moving around 3.50, and fell eventually, after the Norwegian war, to below 3.20 to the dollar. This slump aroused criticism. The Authorities once more maintained that the free rate had no importance and that capital export was not taking place.[3]

But with free sterling quoted at almost 25 per cent. discount the interest for British exporters to invoice in sterling goods other than those specified was overwhelming. Quite apart from its internal repercussions on prices, this depreciation affected our economic system in two ways: certain imports, especially from countries which had introduced exchange control, were still invoiced in sterling at higher prices than would correspond to the official rate (e.g. leather) and the non-specified currencies—i.e. currencies for which the Bank of England did not quote official prices—were moving with the free sterling rate. But in the case of most of these countries—and more especially Italy—depreciation was contrary to all sense, as we had a favourable balance with them, and we ought to have appreciated, not depreciated, sterling against them to help to liquidate the balance. This irrational position could not be expected to last[1].

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[1] The formation of the U.K. Trading Corporation cannot be regarded as an effort to solve the general trade problem. It was a belated attempt to deal with the problem of competing with totalitarian trade methods in the Balkans.

[2] S. R. & O., 1940, No. 291.

[3] "Further light was thrown on the topic of the importance of the free sterling market by the prohibition by the Argentine of the use of free sterling for payments in Great Britain."—*Times*, April 11, 1940. Unnecessary and harmful delays occurred in incorporating the Belgian and Dutch Colonial Empires into the sterling-franc bloc.

In the field of foreign trade policy, Hitler's extension of enemy controlled territory (which, apart from its direct effects, meant a welcome lessening of the pressure for imports by the Foreign Office and the Board of Trade) and apprehensions about port facilities at last led to a sounder policy with respect to imports. All imports were now required to be licensed.[2] If licences, especially general open licences, are still granted somewhat freely, if some essential imports are still not under sufficient control, it is to be expected that with the reorganisation of the Ministry of Supply the import position will be brought on to a war basis.

In the field of export policy the Board of Trade decided to promote exports not by reorganising the export trade, or by restricting home demand, but by restricting home supplies. A restriction scheme was promulgated by the Restriction of Supplies (Miscellaneous) Order.[3] It was decided to apply it at the stage of deliveries from the wholesalers to retailers. As the Chancellor of the Exchequer failed even to approach a solution of the budgetary problem, quite apart from the fact that not even a solution of that problem could—as we have seen above—have provided a solution for the problem of limiting home demand, and as, on the other hand, no direct measures were taken to limit home demand, this policy would not seem calculated to provide a socially equitable solution. In fact retail sales remain high. Stocks are being exhausted. People with adequate capital reserves are providing for the future. When the full rigour of restriction really makes itself felt, the poorer classes will be further hit, as there is no safeguard that future supplies will be distributed according to need.

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[1] The Authorities themselves evolved a distinction between " soft " and " hard " currencies. They took no steps, however, to ensure that arbitrage operations in free sterling between these countries should not render this distinction in effect farcical. In the meantime the distinction was operative only in so far as it complicated and slowed down direct purchases by Government Departments from certain countries. The old position by which control was made ineffective except in slowing down the war effort continued.

[2] S. R. & O. No. 873 of 1940.

[3] S. R. & O. No. 874 of 1940.

As, moreover, the restriction scheme was operated in the distribution sphere and merchants were allowed to cancel orders, while the manufacturers were unable to cancel their supplies, whole trades were thrown into utter confusion (especially cotton). No parallel planning in the production of raw material spheres having taken place, the reduction of output was left to chance. Hence financial rather than efficiency considerations decide if and what factories should close down. In the main, as was to be expected, the reduction was effected by a general reduction of the scale of operations. In many instances Government orders were forthcoming to fill part of the gap. But as they, also, were unplanned, the method was calculated to maximise hardship for both employers and workers. The release of productive factors per unit of reduction of civilian supplies was reduced far below the level which could have been attained by a more careful planning and less reliance on bastard *laisser faire* methods. As cost per unit of both production and distribution must under these circumstances rise, " even " the Price of Goods Act does not seem an adequate safeguard against a further rise in prices.

In the case of cotton the Government at last perceived that the restriction of home supply and consumption could not automatically increase exports. A company, the first export company, was formed in July, the eleventh month of the war. Instead, however, of spreading the cost incidental to financing exports over the whole community according to capacity to pay, it now seems clear that a levy on the industry is planned. In so far as the Government is a large customer of the industry this will cause no damage. But, so far as civilian supplies are concerned, cotton is still bought mainly by the poorer classes. Hence we are confronted with one more of the fashionable regressive extra-budgetary taxes.[1]

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[1] Some of the export groups now seem to operate as export cartels. In so far as internal competition is avoided this is all to the good. But it does not solve the problem of subsidisation. It is not clear whether these export groups have been assessing levies or not. In

(c) *The Present Position.*

In the beginning of June the free sterling rate moved to below 3.20 to the dollar.

At that moment the Treasury suddenly decided drastically to reverse its policy. The new regulations were passed with such speed that their operation had to be postponed for a few days after their passing because of the repercussion on exports. Foreign securities were completely blocked—presumably because there were no means at hand for distinguishing between " financial " and " commercial " sterling, a distinction so contemptuously rejected before, and which would have served its purposes so well. Hence extreme measures had to be taken to shut off this source of free sterling.[1]

The new order (S. R. & O., 1940, No. 892), followed by a more comprehensive one (S. R. & O, 1940, No. 1254), finally ended the " international " status of the pound, so heroically defended for almost a year. The first order provided that all exports from Britain to " specified " countries were to be paid for in sterling obtained from the Control or from " special " accounts (the rate for which is the official rate and which can be credited only for specified reasons and with the permission of the Bank of England) or in foreign exchange. It was announced that payments agreements were to be negotiated with all neutral countries. The second order also regularised the position with respect to the United States and Switzerland, the only two " free currency " countries, and systematised the position with other countries.

The scheme as now in force amounts to a modified form of clearing agreement. The rates of exchange are fixed. " Special " or " registered " accounts as the case may be are used exclusively for current transactions. In the case of a few favoured countries " sterling area " accounts have also been created into which the interest and other income due to foreigners from sources other than current transactions may be paid (and amounts can also be transferred from registered or special accounts of the same nationality).

August the export insurance schemes were further extended to cover normally uninsurable risks. This amounts to a subsidy, but as it is haphazard in its operation it can only palliate the problem and not solve it. The time still does not seem to have arrived when a systematic scheme will replace piecemeal messing about.

[1] The enabling regulation was issued on May 12 (S. R. & O., 1940, No. 708). The last links in the exchange control were also tightened up (bearer bonds, etc.). Curiously enough, no stamping of home-owned securities was ordered, which would have rendered the execution of this order much easier.

These accounts can be used only for specified purposes inside the sterling area. Balances cannot be transferred from one nationality to another. The " free " sterling balances which remain can be used, in the main, only for transfer to foreigners of the same nationality or for payment to residents for purposes other than those in respect of which " registered " or "special" accounts sterling must be used. As the volume of these balances cannot increase they represent no further problem. As " arbitrage " is prohibited, the " free " rates will of course be different in different countries.

With this measure full bilateralism was established in principle. Payments agreements were negotiated with speed, and at the moment of writing include all important countries. The loopholes in our exchange control have been stopped except perhaps as far as price control over exports is concerned.

Yet the reversal of the declared policy of the Treasury has not resulted in such reorganisation of our foreign economic policy as would be necessary to secure the maximum gain from our exports :

(*a*) We have now the possibility for discrimination. But all agreements have been negotiated either on the basis of the " official " rate or the last " free " quotation. The latter basis (Portugal) is especially reprehensible. No attempt seems to have been made even to establish " special " accounts with a high rate for sterling for the purchase of specific commodities (wine, etc.) in which we have a strong bargaining position.

(*b*) No attempt has been made (except in the case of films) to use the device of blocking for the purposes of obtaining credits (especially in the case of agricultural products).

(*c*) The absence of " financial " or " security " sterling inflicts unnecessary hardship on foreign owners of British securities. There is no sense in completely blocking these securities. What ought to be forbidden is the use of their proceeds for other than " capital " purposes. If there were more sub-division of sterling a much more elastic policy would be followed.

(*d*) Budgetary, exchange rate, internal production and export price policies still lack co-ordination. It is foolish to inflict hardship without purpose on employers and labour. The new measures imply an appreciation of sterling by almost 33 per cent. for most of our exports to U.S. Does the Treasury think that a policy of penalisation and exhortation will under present conditions result in increased exports ?

(*e*) The all-important problem of stocking has not been even tackled (except, in a very half-hearted way in the case of coal).

(*f*) By a continued lack of inter-Imperial co-ordination and supervision one of the most important sources of leakage and divergence still persists.

(*g*) The method of payment of balances accumulating in the new special and registered accounts has not been published, except in the case of America, where gold or dollar payment is stipulated. It is to be hoped that a growing proportion of exports will be paid for in some kind of blocked sterling and that the question of the liquidation of our foreign assets and repayment of our loans will be regulated. No indication has been forthcoming that new methods are being followed in these directions.

(*h*) It is very much to be hoped that the statement alleged to have been made by Sir F. Phillips in Washington that it is proposed to abandon the system of controls and return to *laisser faire* after the war is not a considered expression of Government policy. The reconstitution of our markets and of our foreign reserves is an essential problem of demobilisation and would hardly be possible without strong controls.

These are specific points arising out of the export problem. But behind it all remains the unsolved question of total-war organisation. As a sample of the whole war-economic organisation, the history of our foreign economic war policy presents a melancholy picture of delay, lack of imagination and lack of initiative. The Government (and in this very complicated field, as in others, this exclusively means the Civil Service) were unable to free themselves of their peace-time prejudices, were unable to analyse afresh the new problems which were thrust on them by the war and which they could not escape. They resisted all change. They denied that problems existed. They countered criticism by statements as complacent as they were misleading. Finally when they were driven in a sector to accept their critics' policy, in their fundamental resistance to that very policy they robbed it of most of its merits by a continued lack of imagination and planning.

The outworn divisions between the functions of Departments clearly demand an early review. It seems hardly tolerable that matters which are inherently interconnected and which demand unified decision and specialised expert knowledge, imagination and initiative should be dealt with by two or more Departments, the permanent staffs of which, and more especially their Senior Officials, are overburdened by other tasks and, owing to their peace-time traditions, have divergent outlooks and methods of approach, and that an uneasy compromise should then be laboriously worked out. It is useless to blame Ministers who cannot in the nature of things be expected to know the background of the problems or to form an opinion on the soundness of the solution. There is a basic conflict to-day between the facts of the position and the constitutional fiction of Ministerial Responsibility for which a solution must be found.

A system in which the concept " administration " is separated from, and in most cases opposed to, " theory ", in which " intelligence " is not equivalent to " action ", seems to suffer from grave handicaps when confronted with a system in which central planning is made elastic by decentralised execution.

The Analysis of Producers' Expectations

By R. H. Coase and R. F. Fowler

The economic theorist may not unreasonably regard the creation of new techniques of analysis as his most important task. Confident in the significance and importance of his theory he often values it primarily for its æsthetic qualities and is content to leave to others the verification of his assumptions. Now it is not denied that propositions whose truth is not susceptible of proof or disproof by reference to reality may yield light; but their use is limited. The degree of confidence with which a theory can be applied to the solution of practical problems depends on whether it has been verified.

Of no branch of economics is this more true than of that part of modern dynamics which deals with the nature of expectations. The applied economist whose task it is to verify theories and to assess their practical importance, is, therefore, confronted with difficult problems. It is not possible to observe expectations[1]; it is not even possible to infer their precise nature except on the assumption of rational behaviour. This is perhaps the best line of approach. We can study what producers actually do and then, assuming that they act rationally, we may be able to infer what their expectations must have been.[2] *A priori* it is extremely difficult to say how expectations will vary following any given change in the economic situation. Statistical evidence, if it could be obtained, would clearly be of great value. The aim of this paper is to examine the problems which arise when the statistical derivation of producers' expectations is attempted.

It is at times possible to infer the *direction* in which expectations are moving by observing changes in certain economic quantities. Thus one may be able to discover the way in which expectations of relative profitability are altering by studying figures indicating investment or the fluctuations in the price of a main raw material. One may be able to link up these changes with movements elsewhere in the economic system and thus discover what causes business men to revise upwards or downwards their estimates of profits.

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[1] Except by introspection. This, however, is likely to be difficult and in any case generalization from such a small sample would probably be unreliable.

[2] That is, producers act as if they had these expectations.

Such results, however, although useful, are often not sufficiently precise for purposes of theoretical analysis. In general, we are concerned not only with the direction in which expectations are moving, but also with the extent of these movements. In particular, we are concerned with expectations of *price*. This raises several difficult problems. First of all, the particular period in the future to which such a price refers has to be specified. Secondly, expectations are more accurately thought of as a range of probable prices in the mind of the producer rather than as one single price. The expected price must be regarded as " that expectation . . . which, if it were held with certainty, would lead to the same behaviour as does the bundle of vague and more various possibilities which actually makes up his state of expectations when he reaches his decision ".[1] Thirdly, it is not possible to infer price expectations from producers' actions without taking into account variations in expected costs. One type of cost which must necessarily be excluded from the analysis is the psychological cost of change to the producer. It might be argued that a producer may expect a certain price, but that, owing to the mental resistance set up in his mind, he does not readjust his production policy accordingly. On the other hand, it is also true that his expectations may be affected by this attitude. In either case, there is no means of making allowance for this factor.

A more general but possibly more important criticism of work in this field might be levelled against the assumption that one can speak of a change in expectations of a group as a whole, the assumption being either that the expectations of all producers move in the same direction or that the change is representative. The effect on the total situation will depend mainly on the change in the expectations of those who can most easily expand or contract their output. With a given frequency distribution of expectations the result of any change will depend on the cost situations of the producers holding the various price expectations. It is not at all unlikely that those who are in a position to expand most easily and whose actions therefore are predominant in determining actual prices and quantities are unrepresentative of the whole group. In our studies of the pig-cycle published in ECONOMICA we assumed that it was possible to speak of expectations of a group in this way.[1] It would, however, be desirable to test the correctness of this assumption.

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[1] See J. M. Keynes: *The General Theory of Employment*, etc., 1936, p. 24, note 2.

In these studies a method of analysis was employed which made possible the statistical derivation of expected prices. This method was devised to controvert certain views about farmers' behaviour held by the Reorganisation Commission. In brief, the Commission believed that farmers assumed that present prices and costs would continue unchanged, an assumption perhaps more widely known to economists as that of the " cobweb theorem ". We argued that since the market for store-pigs[2] was competitive, their price would be bid up or down by pig feeders in such a way that the difference between the expected price on the one hand and the costs of feeding together with the cost of the store-pig on the other, would be equal to the amount needed to compensate farmers for other costs and the risks of investment. There were reasons for supposing that, changes in the profits of alternative occupations apart, this difference would show a relatively high degree of stability. In fact, it showed considerable fluctuation and we concluded that the assumptions made by the Commission could not be substantiated. In a criticism of our paper Miss Cohen and Mr. Barker agreed that on this point the conclusion was " almost certainly sound ". In developing their argument, however, they adapted our method so that it could be used to derive an expected price[3] ; and we ourselves adopted this form of approach in our second paper. Nevertheless the two techniques are by no means identical. Our first approach was negative. It showed that farmers did not make certain assumptions about the future level of prices and costs but it did not indicate what precisely were their assumptions.

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[1] R. H. Coase and R. F. Fowler ; " Bacon Production and the Pig-Cycle in Great Britain," ECONOMICA, May, 1935 ; and " The Pig-Cycle in Great Britain : An Explanation," ECONOMICA February, 1937. See also " The Pig-Cycle : A Reply," by Ruth Cohen and J. D. Barker and our rejoinder, ECONOMICA, November, 1935.

[2] Store-pigs are sold at from 8 to 16 weeks old to feeders who fatten them for the bacon market in which they are sold 5 months later.

[3] See Cohen and Barker, loc. cit., p. 420.

To discover the expected price of a bacon-pig we must know three things :—the price paid for a store-pig, the costs of feeding for five months and the profit margin necessary to induce the farmer to invest in store-pigs (the short-period normal profit). If these are known, then the expected price of a bacon-pig will be equal to their sum.[1] The price of the store-pig is objective—it represents the price actually paid. On the other hand both the remaining constituents of the expected price depend to varying degrees on expectations. Miss Cohen and Mr. Barker assumed that farmers expected the price of feeding-stuffs to remain unchanged for the next five months and we followed their example. Variations in the costs of feeding-stuffs would not really have made very much difference to the expected price obtained. Any assumption about the expected prices of the costs of feeding-stuffs is, of course, arbitrary, in the absence of further information ; but since any reasonable assumption gives much the same result it does not greatly matter which assumption is selected. Finally, we assumed that the *expected* profit margin (the short-period normal profit) was equal to the trend value of the *realised* profit margin. That is, the short-period normal profit margin was assumed to be unrelated to *cyclical* variations in the realised margin. Since there was almost no trend in the realised profit margin during the period covered by our investigation we may say, for convenience, that the short-period normal profit margin was assumed to be approximately constant.

Although we believe that the assumptions necessary for this method to be utilised were largely fulfilled in the pig industry, they are, nevertheless, of a very special character. It is important that this should be clearly understood, not only if the significance of our results is to be appreciated, but also if this technique is to be used in other fields. In this paper we propose to examine at greater length some of the difficulties encountered in the use of this technique.

The crucial assumption which was made was that the short-period normal profit margin was unaffected by cyclical fluctuations in the realised margin. In this connection it should be noted that the profit margin is a *gross* profit ; it has to cover all costs other than those incurred for the purchase of the store-pig and its feedstuffs, viz., wages, rent, transport and the investment costs. The assumption of independence between the short-period normal profit margin and the short-period fluctuations in the realised margin implies perfect elasticity of supply (in the short period) of those factors taken together which are remunerated from this margin. The normal profit margin is, however, likely to vary for the following reasons. Firstly (a dynamic factor), net profits in alternative lines of investment may change. Secondly, costs of production may vary with the number of pigs fed (a static factor) or for other reasons.[1] Thirdly, the farmer's attitude to risk-bearing may change either with the amount of his investment in store-pigs or for reasons which are independent of the magnitude of this investment.

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[1] A possible criticism of our investigation, though not of our method, is that a large number of different markets were aggregated. It would clearly be more appropriate to examine separately the markets in different parts of the country. (Cf. Cohen and Barker, loc. cit.)

(1) The existence of multi-product firms presents a real difficulty; for variations in the "profits" obtained on any one product involve a change in the profit margin necessary to induce investment in the other product. This difficulty is particularly in evidence in agricultural production. Fortunately the difficulty, though real, is not so important as it appears to be at first sight; for it is only the *net* profit in alternative lines which can influence the profit margin necessary to induce investment in the product under consideration. But the profit margin which we have used is a *gross* profit. Suppose that the net profit margin per unit of output is 50 per cent. of gross profits and that the net profit in some alternative line of investment increases by 20 per cent. It follows that the gross profit margin necessary to induce production will have increased by 10 per cent. Let us suppose further that the gross margin per unit represents 15 per cent. of the expected price. Then the calculated expected price should be 1.5 per cent. greater. In this example, therefore, a failure to take account of a 20 per cent. increase in the net profit per unit in alternative lines of investment will involve an error in the expected price of only 1.5 per cent. In the feeding of bacon-pigs these figures are probably fairly representative. Moreover it must not be forgotten that while some alternative lines of investment will be increasing relatively, others will be decreasing, so that the transfer of investment may take place largely

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[1] In fact, we did not consider that variations in these costs unconnected with variations in output were significant.

between these alternative lines; and the return necessary to induce investment in the line under consideration may be little affected. Nevertheless, this factor remains a potential source of difficulty and it must be a matter of investigation in each case whether the movement of profits in alternative lines is sufficiently great to vitiate conclusions reached by a consideration of calculated expected prices.

The existence of a pork market in addition to the bacon market raises certain points which need to be considered. It might be argued that the movements in store-pig prices mainly reflect the expectations which were entertained concerning the price of porkers rather than of baconers. This is perhaps true—although it certainly is not always true—but it still remains the case that if a higher store-pig price, due to an increased demand by the pork market, is to be paid by feeders for the bacon market, they must have revised upwards their views on the future price of bacon-pigs. Since some store-pigs will have been diverted to the pork market there will be justification for this view. The existence of a pork market, although it may complicate any consideration of the factors governing pig prices, does not seem to hinder the determination of an expected price for a bacon-pig. It might be argued, however, that a change in the profits from a pork-pig is of great importance in that it invalidates the assumption that a change in the profits from alternative lines can be ignored. It should be noted that although the realised profit from feeding a store-pig for the pork market may vary, the expected profit margin is not likely to vary much for reasons which we discuss below in connection with the bacon market; and it is the expected profit in alternative lines of investment which is significant.

(2) So much for variations in net profits: we turn now to variations in costs. It is, of course, unreasonable to suppose that the cost per unit of output will remain unchanged as the number of pigs fed rises. The more store-pigs a farmer buys, the greater are the costs per pig likely to be.[1] But while the existence of multi-product firms creates difficulties with regard to the profit margin, it makes this point of much less significance. For it is possible to secure a relatively large increase in the output of one product at the expense of small reductions in the outputs of a number of other products. As the Reorganisation Commission stated, " Some

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[1] Cohen and Barker, loc. cit., p. 417.

farmers, both small and large, always make a point of feeding pigs. They merely increase or decrease the number kept according to the prospect of the market". Furthermore there are many producers who add pig-feeding to their activities when it seems profitable to do so. These two factors taken together imply that the rise in unit costs is not likely to be very great for those changes which do in fact occur.

Even if this were not so, however, there is another factor tending to offset the rise in costs. As a result of an increase in the number of pigs fed, the price of store-pigs tends to fall. The pig population in June, 1926, was 2 millions and in 1928 it was about $2\frac{3}{4}$ millions[1]; the price of a store-pig in these months, however, had declined from £3 0s. 0d. to £1 6s. 0d. If we assume that the proportion of store-pigs in the total pig population had not varied greatly, it follows that the aggregate investment in store-pigs (number × price) fell considerably when the number of pigs fed rose. This does not, however, take into account the capital required on account of feed-stuffs. As feed-stuffs can be obtained on credit, this increased need of capital can be satisfied at very little, if any, increased cost per pig. In any case the investment required for feeding-stuffs is less than the aggregate costs of feeding-stuffs would suggest, owing to the fact that the greater part of these costs are incurred a month or two prior to the sale of the bacon-pig.

We, therefore, conclude that even though the price of feeding-stuffs tends to be higher when the number of pigs fed is large, the investment *per pig* will tend to fall and the total investment to rise slightly. It seems probable that the fall in the investment per pig does tend to lower unit costs when output is high. This is, therefore, an additional factor tending to increase the elasticity of supply of those factors remunerated out of the gross profit. The assumption that the short-period normal "profit" margin required per pig does not alter is probably not far from the truth. Nevertheless, this assumption is one which it would be most unwise to make in other investigations unless one could be sure that the structure of production in the industry concerned is such as to justify it.

(3) Finally, there are variations in the farmer's attitude to risk-bearing. In so far as his willingness to bear risks is a function of his aggregate money investment, the

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[1] These figures exclude brood-sows and boars used for service.

conclusions of the preceding paragraph suggest that such variations will be small and may safely be neglected. On the other hand, variations in the general optimism or pessimism of farmers may have substantial effects on the minimum net profit margin necessary to induce a given level of investment. The general belief of economists appears to be that the risk-premium is lower than average during periods of rising and high profits and higher than average during periods of falling and low profits. If this is true, it follows that, other things being equal, the short-period profit margin per bacon-pig will tend to fall during periods of high prices and to rise during periods of low prices.

Conclusion

It may be useful, in conclusion, to summarise briefly the main characteristics of the methods we employed for deriving expectations. In developing our first method, we were concerned with the *direction* in which expected prices moved rather than with the magnitude of these prices. Our object was to see whether the assumptions of the cobweb theorem were fulfilled in the bacon-pig industry. We considered what must have been the movements of the expected profit margin if farmers had assumed that current prices and costs would remain unchanged. We were able to show that the short-period normal profit margin almost certainly fluctuated less than this calculated margin. It followed, therefore, that the expected price fluctuated less than the actual price. Essentially our method enabled us to obtain *limits* to the variations in expected prices rather than to secure estimates of the expected prices themselves.

In our second study, however, we employed the technique devised by Miss Cohen and Mr. Barker which involved the calculation of an expected price. To do this, many assumptions have to be made; in particular a "normal" profit margin and its variations have to be estimated. The expected price can be obtained only subject to a margin of error. If one is willing to assume that errors are distributed randomly, it may be possible to employ this method. Particularly is this so if it is possible to combine a number of techniques. This we did in our second paper. We not only calculated estimated prices but also made estimates of new investment. Using these results, we were able to give a general explanation of the nature of farmers' expectations and consequently of the fluctuations in bacon-pig prices. This explanation was of a very general character because we had to make various assumptions about the elasticity of supply of factors of production and the character of supply conditions. A fuller explanation of the pig-cycle requires not so much a new technique of analysis but rather a more detailed study of these supply conditions in the various markets.

APPENDIX

THE ELASTICITY OF EXPECTATIONS

Professor Hicks, in his book *Value and Capital*, handles price expectations in an even more precise way by introducing the concept of the elasticity of expectations. This expresses in mathematical form the relation between variations in expected and current prices and constitutes an attractive new method of analysis.[1] The elasticity of expectations of a price of a commodity X is defined as " the ratio of the proportional rise in expected future prices of X to the proportional rise in its current price ".[2] If expectations of prices in the future do not change when there is a variation in current prices, then the elasticity of expectations is zero. When current and expected prices move in the same direction (either up or down), the elasticity of expectations will be positive. When the movements are in opposite directions, the elasticity will be negative. It should be noted that this way of looking at price expectations links them up with one single factor—the proportional rise in current prices of the product. In fact, of course, expectations are likely to depend on many other factors.

In considering positive elasticities, Professor Hicks stresses the importance of distinguishing three groups :—elasticities less than unity, equal to unity and greater than unity. In his system, an elasticity equal to unity represents a critical case, where stability gives place to instability. He also distinguishes an intermediate group with positive elasticities between 0 and 1 ; and the two extreme groups of elasticities greater than unity on the one hand and negative on the other. " The elasticity of expectations will be greater than unity, if a change in current prices makes people feel that they can recognise a trend ; so that they try to extrapolate ;

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[1] J. R. Hicks, *Value and Capital*, 1939.

[2] *Ibid.*, p. 205.

it will be negative if they make the opposite kind of guess, interpreting the change as the culminating point of a fluctuation."[1]

In interpreting movements in the elasticity of expectations in this way, Professor Hicks seems to have assumed implicitly that the initial position is one of stationary equilibrium.[2] He states that if the elasticity is positive and greater than unity, producers are acting as if they recognise a trend in actual prices and try to extrapolate. But the exact reverse may be true. For example, if actual prices are rising, but are expected to fall, the elasticity of expectations can still be greater than unity provided that expected prices were previously below actual prices.[3] Similarly, if prices are rising and the rise is expected to continue, the elasticity of expectations might be negative, if expected prices are above actual prices. Such cases will, of course, often be found.[4]

It is clear that there are certain limitations to the use of the elasticity of expectations as a tool of economic analysis. By itself this co-efficient does not tell us whether people expect actual prices to rise or fall in the near future. This can be done simply enough by a comparison of the actual and expected prices. Furthermore, as Professor Hicks himself points out, it is the extent of the divergence between expected and realised prices which is of " central importance theoretically " and this can be obtained only by an analysis of actual and expected prices.

The main difficulty which has to be faced in obtaining any estimate of the elasticity of expectations is that since this measure is a ratio of proportionate changes, small errors in the expected and current prices will lead to much greater error in the calculation of the elasticity. The prices employed, however, are bound to be subject to some degree of error and this will be increased in the process of deriving the expected price. Consequently, it is only by assuming that the errors so introduced are distributed randomly that the results of these calculations can be accepted as a general indication of the magnitude of the elasticity. This means that the cyclical fluctuations in the elasticity of expectations—if they exist—are difficult to isolate. In any case expectations depend on many factors other than changes in the price of the product and it seems improbable that anything more than an average value of the elasticity over a period can have significance. Such results may, however, be useful for some purposes.

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[1] J. R. Hicks, *Value and Capital*, p. 205.

[2] Cf. his statement that when elasticities of expectation are unity " any change in current prices is expected to be permanent ". This is clearly true only in conditions of stationary equilibrium.

[3] Suppose that the current price rises from 8/- to 9/- and that the expected price associated with these current prices rises from 4/- to 5/-; then the elasticity of expectations is +2.0 but a fall in the current price is obviously expected !

[4] Cf. R. H. Coase and R. F. Fowler, " The Pig-Cycle in Great Britain : An Explanation." ECONOMICA, February, 1937, p. 65.

In conjunction with movements in actual prices, movements in our expected prices can be used to obtain an elasticity of expectations for pig-feeders.[1] There are, however, certain difficulties in interpreting the results so obtained. Since the elasticity of expectations is the ratio of proportionate changes, small variations in actual or expected prices will alter considerably the resulting figure. The current price used is an average of monthly prices in a number of " representative " markets. Small variations may, therefore, not be significant for purposes of the investigation. Furthermore, the method used for obtaining the expected price was necessarily rough. The variations from the " true " value so introduced are, however, likely to be distributed randomly and it is probable that some general conclusion can be achieved. Moreover, the use of a moving average of the proportional changes may eliminate certain of the random elements. In fact, the statistical material which was used proved much less intractable than might have been supposed.

Not all movements, however, can be regarded as random. For one thing, the elasticity of expectations is itself likely to vary from time to time. Unless there is a marked trend, in the elasticity of expectations, it will be impossible to distinguish " real " movements from those due to the imperfections of our figures. In fact, there is no such trend, and in general, therefore, it has proved difficult to say anything very definite about changes in the elasticity of expectations. It is, however, possible to say something about the effect of seasonal changes and this will be discussed below.

The method employed was to calculate the change from one month to another in the actual and expected prices. These were then expressed as percentages of the respective prices in the preceding month. Since small random fluctuations will greatly affect the elasticity of expectations, we smoothed these fluctuations by taking a three months' moving average of the percentage changes. We then calculated the elasticity of expectations using these figures. The results are set out in the table below.

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[1] The expected price is the price which pig-feeders expect to rule five months later.

Of the 119 values of the elasticity of expectations, 80 are positive and 39 negative. In 58 instances the elasticity was between 0 and +1 and in only 22 instances was an elasticity equal to or greater than unity recorded. That is to say, about half of the instances are between 0 and +1, while of the rest, the negative values are twice as numerous as those positive values which are above unity. The relatively small number with an elasticity greater than unity is worth noting in view of the significance attached to this value by Professor Hicks.

Owing to the existence of a few extreme values, the arithmetic average would not be representative and the median has been taken. The median value was +0.28. There is considerable variation about the median, the upper quartile being +0.72 and the lower quartile —0.10. Nevertheless, in spite of this wide variation, the distribution is symmetrical, the Bowley measure of skewness giving a co-efficient of +0.07.[1] This means that the median is in fact very close to the modal value and can, therefore, be regarded as representative. There can be little doubt that in general the elasticity was positive but low, probably nearer zero than unity and almost certainly less than unity. It is worth observing that, if our estimate of the short-period normal profit margin was too high, this would mean that the elasticity of expectations, as calculated, would be too low. None the less, no conceivable reduction in the profit margin would have raised the median elasticity to a significant degree.

There are apparently no cyclical fluctuations in the elasticity of expectations and it is difficult to associate with any confidence such large movements as do occur with any phase of the cycle of pig prices. There have been no violent fluctuations since 1927, except during the three months November, 1930, to January, 1931. It is worth noting that there is some tendency to a seasonal movement in the elasticity of expectations. It appears to be lower in the first half of the year than in the latter half. To understand this, it is necessary to bear in mind that there is a seasonal movement in pig prices, with the peak in the spring, and that pig-feeders sell their bacon-pigs five months after they are purchased. The first half of the year is, therefore, a period of rising actual prices but prices five months hence will in general be lower. In the second half of the year, however, when pig prices are probably more stable, store-pigs are being bought for sale in the winter and spring when prices will tend to be higher. If pig-feeders take into account the seasonal movements in prices, one would expect that the elasticity of expectations would be lower in the first half of the year than in the second. Since statistics show this to be the case, it is almost certain that farmers do take account of seasonal fluctuations in prices.

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[1] Skewness equals $\frac{Q_1+Q_2-2M}{Q_2-Q_1}$ where M is the median and Q_1 and Q_2 are the lower and upper quartiles respectively.

ELASTICITY OF EXPECTATIONS OF PIG FEEDERS IN GREAT BRITAIN

	1922	1923	1924	1925	1926	1927
Jan.		+0·30	*	—0·31	*	+0·72
Feb.		+0·08	*	—0·15	*	—21·5
Mar.		+0·24	+0·38	—0·53	—2·23	+5·40
April		+0·08	—1·76	—3·67	—7·00	+1·13
May		+0·19	—80·0	+0·18	+0·18	+0·10
June	+1·21	+0·45	+0·87	—0·03	+1·63	—0·01
July	+0·89	+1·11	+0·92	—0·66	—0·10	+2·22
Aug.	+1·11	+3·17	+1·81	+0·20	+30·0	+0·43
Sept.	—0·50	+4·25	+1·63	—0·19	+0·41	+0·52
Oct.	+0·38	+0·77	+0·49	—0·66	—1·46	+0·60
Nov.	+0·04	*	—2·08	*	+0·43	+0·63
Dec.	—0·05	*	—0·13	*	+0·21	—0·39

	1928	1929	1930	1931	1932
Jan.	—0·22	+0·26	—0·06	+7·10	—0·11
Feb.	+0·25	+0·37	—0·19	+0·49	+0·27
Mar.	+0·35	+0·27	+1·36	+0·46	+0·03
April	+0·82	+0·23	+0·34	—0·08	—0·14
May	+2·94	—0·35	+0·28	+0·08	+1·55
June	+1·88	—0·02	+0·37	+0·38	+0·65
July	—0·56	—0·13	+0·00	+0·46	+0·48
Aug.	+2·22	—0·05	—0·72	+0·52	+0·48
Sept.	+0·79	+0·54	+0·41	—0·08	+1·60
Oct.	+0·58	+1·20	+1·00	—0·60	+0·94
Nov.	+0·43	+0·62	+1·22	—0·48	—0·25
Dec.	+0·22	—0·10	—3·18	+2·78	+0·44

* Prices unobtainable.

A Study of Interest and Capital[1]

By T. de Scitovszky

The aim of this paper is to study the determination and interdependence of the rates of interest yielded by different kinds of securities. The complexity of the subject makes it necessary to divide it into three parts. In Part I we make an attempt to determine the price and rate of output of securities in a general way; and as securities are a commodity of which large stocks are always extant, we shall begin with a short discussion on the general theory of supply and demand of commodities of which large stocks are usually held, and so derive the price of securities in analogy with ordinary supply and demand analysis. It will be seen that in this way we arrive at a theory of interest rates which is fundamentally a generalisation of Mr. Keynes' liquidity preference theory for any number of securities. In Part II we shall analyse the several criteria according to which securities differ from each other. This will lead us to a more complete understanding of the interdependence of different rates of interest and to a new explanation of the relative movements of long- and short-term rates. In Part III we shall restate the theory in a slightly different form and compare it with the "real" theory of interest and capital.

It is possible to conceive of the rate of interest as being determined by the supply and demand either of capital goods, or of securities, or of money. In this paper we shall always think of it as being determined in the market for securities, and to make the analogy with the supply and demand analysis of consumers' commodities easier, we shall have to think in terms of security prices as well as in terms of yields. This may be a little inconvenient at first because of the inverse relationship between the price and yield of a security, but I hope that the advantages of this approach will outweigh the additional trouble. The "physical" quantity of securities will be measured by their nominal value.

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[1] The writing of this paper was made possible by a special grant from the Leon Bequest Fund. I am very much indebted to Professor O. Lange and Mr. G. Jászi for reading the manuscript and making valuable suggestions.

In Parts I and II we shall deal generally with any number of different kinds of securities. Money is just one of these. Securities differ from each other not because the capital goods they represent are physically heterogeneous, but according to their promised yield, life-time and risk of default. For goods must always be differentiated from the buyers' point of view, and yield, life-time and riskiness are the only characteristics of a security that matter to the investor. For example, beet and cane sugar, or natural and artificial rubber, are identical commodities if consumers do not or cannot distinguish between them; similarly, two securities are homogeneous whatever the nature of the capital goods they stand for *if* they are equally safe and offer the same income for the same period.[1] The meaning of these characteristics will be discussed in detail in Part II. Until then we shall simply have to accept the fact that securities differ from each other in several ways, just as consumers' goods differ in taste, colour, consistency and a hundred other respects.

We shall have to make two simplifying assumptions, to be retained throughout this article. The first is the exclusion of ordinary shares and all other non-fixed-interest-bearing securities. This is admittedly a limitation. I believe that the co-existence of stocks and shares has some very important and interesting consequences, but I also think that this problem is additional to ours, in the sense that its solution would supplement rather than distort our results, so that its discussion may be reserved for some future date. For the time being our analysis will be considerably simplified by the absence of all non-fixed-interest-bearing securities.

Our second assumption is rigid money wages within the short period, in the sense that money wages in any short period are independent of changes *in the same* short period. Dropping this assumption would lead to interesting and rather unexpected results,[2] but the discussion of such problems is beyond the scope of this paper. Besides, I believe the assumption to be a realistic one.

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[1] We abstract from the problem of shifts in consumers' demand from the *services* of one capital good to that of another.

[2] These will be discussed in a forthcoming paper of mine, entitled: "An Attempt at a Theory of Price Flexibility."

I

In the supply and demand analysis of an ordinary consumers' good, supply is represented by the flow of production, demand by the flow of consumers' demand,—both functions of price—and the equality of these two is said to determine the equilibrium price and flow of output. This is a legitimate approach to reality in the case of many commodities which cannot be stored or the stocks of which are small and independent of price—depending only on storage costs and the rate of turnover. When, however, the volume of stocks is a function of price and is large relatively to current production,[1] then supply will no longer be equivalent to production, but will—at certain prices—be temporarily augmented by a reduction, or temporarily reduced by an accumulation, of stocks; and this factor may become so important relatively to current production as to render the above picture of the determination of short-period equilibrium incorrect and misleading.

The reason for a general theory of stocks being as yet non-existent seems to lie in the fact that the desire to hold stocks is usually a very complicated function of price, involving derivatives with respect to time and relative prices at different dates.[2] For the following argument, however, we shall make the simple assumption that the form of this function is exactly similar to an ordinary demand function, i.e., that the desire to hold stocks is a diminishing function of price. This will be shown to be true of the demand for holding securities, and in the short run it also represents—at any rate approximately—speculative demand for commodity stocks, whenever speculation is based on the notion of normality.

Let us consider an equilibrium situation where price is such that current production equals current consumption and the volume of stocks corresponds to the volume demanded by " stockholders " at that price. Then assume a shift in consumers' demand. In the absence of stocks there would be an immediate change in price, followed by the adjustment of production, and a new equilibrium would be established at the new point of intersection of the two curves. In the presence of stocks, however, the situation will be different, because the establishment of the new equilibrium will be retarded by the adjustment of the volume of stocks to the new price. So a diminished consumption demand (leftward or downward shift of the consumption curve) will be temporarily supplemented by the demand of stockholders who want to increase their stocks as price falls[1]—thereby checking the fall in price and the consequent adjustment of production.[2] Similarly an increased consumption demand will be temporarily satisfied—and the rise in price and production checked—by the dishoarding of stocks. The nature of this retardation can best be described by saying that the existence of stocks sets a limit to the time-rate at which price can change, the limit depending on the size of stocks and the price-elasticity of stockholding. For to each price change there corresponds a certain quantity of stocks which must be released (if price rises) or accumulated (if it falls) before the new equilibrium price can be established; and given the price change, this will be the greater the more elastic the demand for stockholding and the greater the total quantity of stocks. The time needed for the adjustment—and for the new equilibrium to be established—will be the longer the greater is this quantity in relation to the gap between current production and consumption opened up by the initial change in data (and not immediately closed by the requisite change in price), since—to put it crudely—stocks can only be released or accumulated through this gap. If this ratio is very large, because, for example, stocks are very large, then the adjustment of price will proceed so slowly that we can say the influence on price of primary changes in production or consumption is negligible in the short run, and it will be more correct to say that price depends on the quantity of stocks than that it is determined by the intersection of the production and consumption curves.

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[1] The *volume* of stocks and the *flow* of production have different dimensions and are therefore incomparable quantities. We can, however, compare the volume of stocks with the volume of production per unit of time. The choice of this unit is not entirely arbitrary. To be useful it must correspond to the Marshallian short period to which most economic analysis refers. While few economists have assigned a definite length to the short period, the order of magnitude we think of when talking about short-period adjustment and short-period equilibrium seems to be about half a year. This assumption will be made use of at a later stage.

[2] Since the writing of this paper, however, there has appeared a very important article on the subject by Mr. N. Kaldor, " Speculation and Economic Stability," in the October, 1939, number of *The Review of Economic Studies*.

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[1] We have assumed above (see end of previous paragraph) that speculation in commodity stocks is based on the notion of a normal and "just" price which is expected to return and deviations from which are believed to be temporary. In other words, we have assumed the elasticity of expectations to be zero.

[2] Throughout this paper we shall assume production to be price-determined.

If the existence of stocks keeps the price of a commodity temporarily at a level where current production and consumption are not equal, this disparity will cause a change in the level of income which may—if the commodity is important and its stocks large—equate its production and consumption before price has had time to equate them. The way in which this happens has often been described and is known as the theory of the multiplier. A disparity in any particular industry between receipts and income paid out causes a similar but opposite disparity in the rest of the economy. This will disappoint (favourably or unfavourably) the expectations of entrepreneurs in those industries and induce them to change their rate of production and with it the rate at which they pay out income to the owners of the factors of production. This process is cumulative and will continue while the disequilibrium in the first industry subsists, i.e., until current demand is equated to current production, partly by the change in incomes causing a change in demand, partly—to the extent that stocks have adjusted themselves in the meantime—by the change in price.

For a further elucidation of the above argument let us take a specific example. Imagine a community which always spends all its income and has a margin of unemployed resources.[1] We further assume that there is speculation in one of the staple commodities consumed by this society—let us call it wheat—and that the average value of speculative wheat stocks is large relatively to the value of all other speculative stocks taken together. Now imagine a shift in consumers' demand away from wheat. The prices of all the goods which now are demanded more urgently will rise, causing an increased production and a higher level of employment in the industries affected. The price of wheat would fall and cause an offsetting diminution of production and employment in the wheat industry *if* it were not for the existence of speculation. But when the price of wheat begins to fall, people, who believe that the former price of wheat was "normal" and therefore expect it to return after a while, will find it profitable to hoard wheat, thereby checking the fall in its price and production. So we get a net increase in employment in the community, and corresponding to it a rise in the level of incomes. This will increase consumers' demand for most commodities. The increased demand for goods other than wheat will cause employment and incomes to rise yet further ; the increased demand for wheat will check and ultimately stop the accumulation of wheat stocks. Short-period equilibrium will be re-established when incomes have risen sufficiently to make the consumption of wheat again equal to its production *in spite of the change in tastes*. This will probably happen at a wheat price somewhat below the original, corresponding to the now greater wheat stocks. It should be obvious that the argument for a shift in demand towards wheat is perfectly symmetrical.

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[1] The compatibility of these two assumptions will appear presently.

All this, of course, will happen only if prices in those other industries are flexible. If they were as rigid as the price of wheat (e.g., because of the existence of equally large stocks), then the disequilibrium between receipts and outgoings in the wheat industry caused by the adjustment of its stocks would merely cause an exactly offsetting adjustment of stocks in all the other industries, without inducing entrepreneurs to any action. Thus the degree to which the equality between the current demand and current production of any particular commodity is brought about by a change in the level of income rather than by a change in its price, depends on the value of its stocks relatively to the value of all other stocks taken together. The greater the relative value of its stocks, the more sticky will be its price, and the more quickly will the level of income adjust itself through changes in the activity of other industries.

The reader may object here that speculators will not keep stocks at their unnaturally high (or low) level indefinitely ; in fact, that speculators' demand for stocks cannot be represented by a simple diminishing function of price. He will be perfectly right. The change in the level of income described above is only a temporary effect of the shift in consumers' tastes, and the whole argument may be taken as an illustration of the harmful de-stabilising nature of speculation. But it is also an illustration by analogy of the *permanent* effect on the level of income of changes in the propensity to consume. For it will be shown on pp. 299–300 that unlike commodity stocks, the stocks of securities *are* simple decreasing functions of price, so that as regards the latter it will be true to say that they determine security prices while the level of income equates the flow of saving (" current consumption ") to the flow of investment.

This is the more true because securities are the commodity with large stocks *par excellence*. Another respect in which securities differ from other goods is that the current demand for them represents not consumption, but what may be called *normal* additions to stock. It will become apparent that this fact cannot affect the argument, but it will make the exposition easier if we assume for the moment that new securities are bought out of new savings for an entirely different purpose from that which induces people to hold the stock of " second-hand " securities. (In Part III the same argument will be repeated without this analytical dodge.) In this way we can split up the individual's economic problem into two parts: firstly he has to decide in what forms to hold his already accumulated stock of wealth, secondly he has to allocate his flow of income between the flows of different kinds of consumers' goods and securities.

The second of these, to be dealt with later, is the familiar problem of the subjective theory of demand and is generally considered to be solved. The first is exactly analogous to the second. Each security promises a certain yield, distributed over time in a certain way, and each promise inspires a certain degree of confidence.[1] The individual aims at the highest possible average yield, subject to the limitations of his wealth and preference for safety and liquidity. At each constellation of market prices, which to him are given, there exists an optimum selection of securities which, in his opinion, involves the exact amount of risk and illiquidity he is willing to bear and at the same time maximises his average yield.

From the community's point of view the quantity and not the price of each security is given in the short period, and these, together with the individuals' preference scales and the level of income determine security prices.[2] Just as in the general theory of demand for consumers' goods, it can be shown that, neglecting capital-gain and capital-loss effects (these correspond to the income effects of the theory of consumers' demand), the price of each security is a diminishing function of its quantity, while an increase in the quantity

[1] While the yield is an objective quantity, the degree of confidence depends on subjective valuation.

[2] The level of income must be given because money not only satisfies preference for safety and liquidity, it is also demanded for transaction purposes, and this demand is an increasing function of income and the level of employment. Hence an increase in employment is equivalent to a diminution of the quantity of money—available to the investor.

of another security will lower or raise its price according as the securities are substitutes or complements.

The effects of variations in the quantity of money need special consideration. They can be analysed most easily if we think of the price of a security as the ratio of its marginal utility to the marginal utility of money, the *numéraire*. Then an increase in the quantity of money will lower the marginal utility of money, i.e., lower the value of the denominator in the expression for price, and raise or lower the value of the numerator according as the security in question is a complement or substitute of money. So an increase in the quantity of money will cause *all* security prices to rise, those of complements most and those of substitutes least. In the limiting case the price of a perfect substitute for money would remain unchanged, because both the denominator and numerator of the expression for its price would fall in the same proportion.

This is little more than a generalisation of Mr. Keynes' liquidity preference theory of the rate of interest. In the special case when there are only securities of one kind besides money *the* rate of interest is an index of their relative prices which is a function of their relative quantities. The rate of interest, therefore, will rise equally whether the quantity of securities is increased relatively to that of money, or the quantity of money is diminished relatively to that of securities. For short-period analysis it is better to think of the rate of interest as a function of the quantity of money, simply because a change in the quantity of money is easily conceivable within the short period while a significant change in the quantity of other securities is impossible by definition.[1]

When we distinguish between different kinds of securities the crude picture of *the* rate of interest as the demand price of money breaks down because of the multiplicity of interest rates. But it still remains true that the quantity of each kind of capital and hence each kind of security is practically fixed within the short period—securities not representing physical capital (war loans), however, form an important exception—and only the quantity of money is variable. We can say, therefore, that while the prices of different kinds of securities are determined by their quantities and individuals' preference scales, in the short run the quantity of securities representing "real" capital is fixed by the technical limitations of the rate at which they can be consumed, added to or converted into other kinds of capital; so that changes in their prices and yields can only be accounted for by changes in preference scales and in the quantity of money and incomes.[1]

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[1] The concept of the short period originally arose in connection with partial equilibrium analysis. As the equipment of an individual firm can only be changed discontinuously, partial adjustment with constant equipment can be analysed in the intervals between two discontinuous changes in equipment. This was called short-period analysis, and the minimum length of this interval: that period of time which is too short for the entrepreneur to adjust his equipment in response to changes in price, was defined by Marshall as the short period. Its length, therefore, was determined by the gestation period of equipment, which we have assumed above (footnote 1, page 295) to be of the order of magnitude of half a year in industry. When we use the concept of the short period in total analysis we tacitly redefine it to mean a period sufficiently short to make changes in total equipment (which are continuous !) negligible. Statistics of the stock of capital and of current investment suggest that we may legitimately retain the order of length of the short period of partial analysis also when dealing with total quantities. The national capital in England and the U.S.A. has been estimated at about six times the annual national income, i.e., 12 times the national income of our short period ; while net investment and depreciation of equipment are both about (a maximum of) 12 per cent of the national income. So the maximum increase and the maximum possible decrease of the stock of capital is not more than approximately 1 per cent. during a short period of six months.

The above argument contains an explanation of the exact relationship between Mr. Keynes' theory of interest and the so-called classical theory. The classical theory never distinguished between the stock of capital and the flow of saving in this context. If, therefore, we interpret it as meaning that the rate of interest is a function of the stock of securities, it is identical with Mr. Keynes' theory, though for precision's sake one should say "stock of securities relatively to the quantity of money".[2] If, on the other hand, it meant that the rate of interest is determined—analogously with the price of a non-storable commodity—by the equality of current production (investment) and consumption (saving), then it is not identical with the liquidity preference theory; moreover it is also wrong, being based on a false analogy.[3] We have seen so far how security prices are determined in the market where capitalists choose the form in which to hold their wealth—the quantity of securities and the level of income being given. With the exception of money and other securities representing non-tangible capital, the quantity

[1] For the problem arising from the fact that securities are not issued *pari passu* with the progress of the investment they represent, see J. M. Keynes: "The 'ex ante' theory of investment", *Economic Journal*, vol. 47, pp. 663–664.

[2] At the same time Mr. Keynes cannot be charged with a lack of precision when he does not mention the stock of securities. For he is primarily concerned with the short period within which that stock is a constant.

[3] We do not propose to criticise here all those writers who have asserted that the Keynesian theory of interest is identical with the classical theory. But the reader's attention may be drawn to an article by Mr. Peter Bauer, "Die allgemeine Theorie von Keynes und ihre Kritiker," *Zeitschr. für Nationalökonomie*, vol. 9, p. 99, who criticises Professor Hicks for not noticing that in the liquidity preference theory the rate of interest equates the supply and demand of a *stock*, while in the classical theory it equates the supply and demand of a *flow*.

of securities is technically fixed in the short period, but there remains the determination of the level of income by (current) supply conditions and the allocation of the flow of income between different uses. We are not here concerned with the determination of the relative prices of consumers' goods, nor with the effect on income of a shift in demand from one consumers' good to another. As to the relative rates at which different securities and different kinds of capital goods are produced, they, as we know, do not affect security prices directly in the short run,[1] while for the determination of income and employment only total investment (i.e., the horizontal sum of all security production curves) and total saving are of importance. So we can concentrate on the relation between investment and saving.

We shall assume that the rate of supply of securities, or, shortly, investment activity, is an increasing function of the level of security prices (diminishing function of the structure of interest rates). This seems plausible enough, but is by no means obvious, nor always true, and will be justified in part three. Until then it must be regarded as an arbitrary assumption. Saving is an increasing function of employment and income. Whether it also depends on the rate of interest is an open question, but makes little difference to our argument. For simplicity's sake we shall assume that it does not.

We have seen that the second-hand market links the structure of security prices to the level of income.[2] Hence the level of income determines, *via* the second-hand market, the level of investment activity; and it also determines directly (and indirectly if saving is also a function of interest rates) the flow of saving. When the level of income is such that these two are equal we have short-period equilibrium. What happens if they are unequal, if, for example, investment exceeds saving?[3] This, as we know from page 297, causes receipts in consumption-good industries to exceed expected receipts (costs), which will induce entrepreneurs to increase current production and with it the level of employment and income. The rise in incomes increases the flow of savings, but—by increasing the transaction demand for money—it also lowers the level of security prices. This latter will have the effect of checking investment activity, and with investment falling and saving rising equilibrium will be established.

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[1] In the long run they do affect relative prices by determining the relative quantity of the stocks of different securities.

[2] Because the level of income determines the quantity of money available for purposes of investment.

[3] It must be borne in mind that while saving may be unequal to investment, the supply and demand of securities will always be equal—even in an "ex ante" sense—because the gap between saving and investment is filled in either by holders of second-hand securities who at that price find it profitable to go into money, or by holders of money who find it profitable to swap money for securities, as the case may be.

So we see that an excess of investment over saving will not only raise the level of income until savings have caught up with investment; it will also lower security prices. This latter effect, however, is brought about not directly by the supply of securities exceeding the demand for them, but indirectly, through increasing employment, raising the transaction demand for money and thereby diminishing the quantity of money available for purposes of investment. Whether changes in the rate of saving or in the level of security prices are more important in bringing about short-period equilibrium is a question of fact. But the great fluctuations in employment and the surprising stability of the gilt-edged rate suggest an answer to it.

II

It has been shown on pp. 299–300 how, given the quantity of different kinds of securities, the price of each of them is determined by the individuals' preference scales. We now proceed to investigate more closely the factors that account for the differences between different securities and cause their prices and yields to be different, and to move differently. It has already been mentioned that from the investor's point of view—which alone is relevant for the determination of price and yield—securities differ according to nominal yield, life-time and risk of default. Nominal yield and life-time are both characteristics of the time-shape of a security and will, therefore, be treated together. In fact, it is often said that a lower nominal yield (coupon rate) is equivalent to a longer life-time.[1] While this is only true approximately, it is a convenient simplification which we propose to adopt, thereby reducing the number of our criteria to two: currency and risk of default. Differences in currency cause differences in yield and price again for two reasons: first, because expected future interest rates vary over time, and secondly, because these expectations are not certain. We shall consider variations in expected future rates first, and assume

[1] Cf. F. R. Macaulay: *Some Theoretical Problems suggested by the Movements of Interest Rates, Bond Yields and Stock Prices in the United States since 1856*. 1938, p. 45.

for the moment that all securities are equally risky both as regards the danger of default and that of changing market valuations.

Having thus excluded the problems of riskiness and of the uncertainty of expectations, it is clear that the demand for different kinds of securities will always be such as to equalise their true yields over any given period of time. In other words, security prices must so adjust themselves as to make investment in all types of securities equally profitable (yield the same interest) whatever length of time one invests for. It should also be obvious that this does not necessarily imply that the market rate of interest on every security must always be equal. For the market rate of a security expresses the rate of interest it will yield on its present value *if held to maturity*.[1] Its yield for a shorter period of time depends on the relation between its market value at the beginning and at the end of that period, and may be greater or smaller than its market rate. If then, given the quantities of different securities, demand conditions are such as to make the yield of a given security (say) 4 per cent., and the yield of another security with a longer currency 5 per cent., this implies that the market expects the yield of the more durable security to rise by the date of maturity of the first security to such a level as to make its true yield over the life-time of the first security also 4 per cent. It follows from this argument that the present market rates of securities of different currency express the expected future course of the market rate of any given security, and that differences in the amplitude of the fluctuations of different market rates can be accounted for by the expected future course of security yields.[2] In the following we shall try to explain the divergence of present market rates from the gilt-edged rate in terms of the future course of gilt-edged rates. Theoretically we could have chosen the future yields of any type of security, but in practice the horizon of expectations is likely to stretch farthest in relation to gilt-edged securities.

The way in which future expectations are based on past experience can be conveniently expressed in terms of Professor Hicks' elasticity of expectations. The simplest and most important case is that of unit elasticity, when people expect present rates to continue unchanged in the future. It is easy to see without further explanation that if the quantity of securities and demand conditions are such as to make the present gilt-edged rate 4 per cent., and people expect it to remain 4 per cent. also in the future, then the true yield of gilt-edged securities will be 4 per cent. over any period of time. Consequently the market rate of *all* securities (i.e., securities of all life-times) must also be 4 per cent. So we can establish our first rule: if the elasticity of yield expectations is unity, security prices must be such and must move in such a way as to make the *market rate* of all securities always equal. We next consider the case of an elasticity of expectations smaller than one. Assume as an example that a change in data causes the gilt-edged rate to rise from 4 per cent. to 5 per cent., but people expect it to return in the near future either to 4 per cent. or to some intermediate level between 4 per cent. and 5 per cent. In other words, people expect an appreciation in the value of gilt-edged securities, and if anybody buys them now and sells after their yield has again fallen, he will make a capital gain, and will have earned interest over that period at a rate higher than the gilt-edged rate of the date of purchase by the capital appreciation. So if the yield on shorter-term securities is to be the same as the true yield on gilt-edged over the life-time of the short-term securities, their market rates must rise more than the gilt-edged rate has risen, and when the latter falls their rate will fall by more. In the limiting case of zero elasticity of expectations the market rates of securities with a shorter duration will fluctuate so much more violently as to make their *prices* move proportionately with the prices of gilt-edged securities.[1] We shall not discuss elasticities greater than unity, but the reader ought to be able to work it out for himself that in such a case it is the market rates of the longer-term securities that would fluctuate more violently in consequence of a change in data.

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[1] We define the market rate as that rate of discount which will make the discounted sum of all future payments promised by a security equal to its present market value.

[2] A somewhat similar argument can be found in chapter 11 of Professor J. R. Hicks' *Value and Capital*, 1939, where it is also proved that this kind of argument is not circular.

So far we have not considered speculation. But whenever the elasticity of expectations is greater than zero, the prices of securities with a shorter currency will be more stable than the prices of those with a longer duration, and this will induce people to go into long when they expect a general price rise, and into short (and money) when they anticipate a fall. This will further accentuate the disparity between price movements, while it will stabilise relative market rate movements when the elasticity of expectations is less than one and de-stabilise them when it is unity or above it.

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[1] This is strictly correct only if the gilt-edged securities are non-redeemable. Otherwise it is only approximately true.

The outcome of this rather involved argument is that it depends entirely on the elasticity of yield expectations whether—and to what extent—it is the differences in life-time that account for the different amplitudes in the fluctuations of different market yields. We shall see presently that our other criterion, risk of default, can account equally well for the observed fact that short-term rates are more volatile than long-term rates; and personally I also believe that this factor is the more important. For it seems unlikely that the elasticity of yield expectations should so consistently be always below unity. But a true assessment of the relative importance of the two factors could only be made on the basis of statistical investigation.

Hitherto we have excluded the problem of riskiness by assuming all securities to be equally risky. Henceforth we shall exclude the problem of different durations, not by adopting a uniform life-time for all securities, but by assuming the elasticity of yield expectations to be unity. In this way we can let differences in the amplitude of price variations be taken care of by differences in currency, while we leave differences in yields to be explained by varying degrees of riskiness. We do not regard this as a correct representation of reality (although we suspect it to be fairly near to it), only as a convenient method of separating the discussion of the two criteria.[1]

Before we can go on to the discussion of risk of default, we shall have to consider another kind of risk: the risk of future changes in capital values. Liquidity preference proper is an insurance against this risk only. We have seen above how the expectation of falling security prices will lead speculators to buy money and short-term bills for long-term securities. In addition to this speculative demand there will also be a more permanent demand for money and bills arising from the uncertainty of expectations, and coming from people who cannot be compensated for a danger of capital loss by the chance of capital gain. Much has been written recently on this motive for the preference of money and low-income-yielding bills over high-income-yielding securities, and we have nothing to add to it. Two things, however, may be pointed out. Firstly that arguments showing an equally strong preference for long-term securities (e.g., by investors who want to stabilise the yield of their investment rather than its capital value) do not affect the liquidity preference theory.[1] Secondly that *in a purely formal sense* the propositions of this paper do not depend on the validity of the liquidity preference theory. This will appear below.

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[1] To be quite correct, if we admit speculation, the elasticity of expectations must be slightly below unity to equalise yields.

Risk of default is the next criterion of differentiation between securities. It is obvious that securities do differ according to the confidence attached to the fulfilment of their promises and that such differences can and do account for differences in their yields. The problem is, in what order does this risk range the different types of securities? Since all securities promise the future payment of money sums, money itself must occupy the first place as the completely riskless security. Gilt-edged securities come next. Their " nearness " to money seems to be the most satisfactory explanation of the great stability of the gilt-edged rate: we have seen on page 300 that it is the yield of the closest substitutes to money which is least affected by changes in the quantity of money and in the level of employment. We have not yet explained, however, the relatively high level of the gilt-edged rate. One reason must be liquidity preference, another, perhaps equally important one, seems to be the high transaction costs (brokerage charges, stamp duties, commissions, etc.) on long-term securities. Assuming a certain stability in the frequency of transactions, this would be an element in long-term rates which is independent of tastes and relative quantities.

In what exact order the stocks, bills and overdraft facilities of all the different private companies and foreign governments and municipalities range on our list would be difficult to decide. Nor is this necessary for our purposes, as we are only interested here in the relation between long- and short-term rates, and that is explained by the special position of short-term securities. It is an important feature of short-term capital that it is mainly held by the banking system.

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[1] For even if there are people who prefer the cinema to the theatre and do not regard it merely as an imperfect substitute for it, their relative prices will still depend on their relative quantities.

In particular, all bank advances are "held" by the banks and the greater part of bills is also held by them. Now it is well known that banks usually tend to keep a fixed proportion between their cash reserves, advances to industry, commercial bill holdings and security holdings; and we also know that such "joint demand" establishes a relation of complementarity between the goods jointly demanded. This will not affect long-term securities, of which banks only hold a very small proportion, but it will make all forms of short-term capital complementary with money. On pp. 299–300 we have discussed the relative *price* movements of substitutes and complements. But having assumed the elasticity of yield expectations to be unity, the argument must now hold about relative changes in *yields*. So we can say that an increase in the quantity of money will affect the yield on gilt-edged securities least, while it will cause the short-term rate to fall most. The degree to which changes in the quantity of money (and in the level of employment) affect the yield on gilt-edged securities depends on their riskiness and on liquidity preference. If we could exclude liquidity preference and assumed for a moment that gilt-edged securities are completely riskless, then a change in the quantity of money would leave the gilt-edged rate unchanged, but it would still cause a large change in the short-term rate and smaller changes in the yields of long-term securities other than gilt-edged.

III

We have attempted, in Part I of this paper, to apply ordinary supply and demand analysis to the special case of securities, and hope to have shown both the analogy and the difference between the determination of security prices on the one hand and of the prices of consumers' goods on the other. We have seen that security prices and interest rates are mainly dependent on the demand for the stock of securities, while current investment and current saving have only an indirect influence *via* the level of income and the demand for money. The demand for the stock of securities has been analysed in greater detail in Part II, and we should now proceed to a detailed discussion of current investment. This is of especial interest, because it is here that "real" elements enter into the present theory which so far must have seemed to be merely a theory of risk and money. To show the relationship between real capital theory and the present theory more clearly, we shall summarise what we understand under real capital theory in the form of two diagrams, and then restate the argument of Part I in the same form. It will be seen that this alternative statement also makes the discussion of the factors determining current investment very simple.

From our point of view the two important concepts of real capital theory are the marginal productivity of capital and the rate of human impatience or time preference. The definition of the former is that rate of interest at which the stream of the marginal value products of a capital good must be discounted in order to make its present value equal to the (replacement) cost of the capital good. Time preference is defined as that rate of interest which must be offered to induce the community to save a certain part of its income. The marginal productivity of capital as well as time preference are functions both of the quantity of capital and of the rate at which capital is being accumulated. For the marginal productivity of a capital good is a diminishing function of the number of capital goods in existence, while its replacement cost is an increasing function of the rate at which capital goods are produced. Similarly, the larger the community's capital equipment, the higher is its real income (assuming full employment), and the less inducement is necessary for people to save ; while given the level of income the rate of saving is an increasing function (according to classical theory) of the rate of interest. To spare ourselves the trouble of drawing three-dimensional diagrams we shall have to introduce two new concepts : *stationary* time preference and *stationary* marginal productivity of capital. The former is defined as that rate of interest at which the community wishes neither to save nor to dissave, the latter as that marginal productivity of capital which would rule if net investment were zero.

We can now show the dependence of these two rates on the quantity of capital in a diagram (fig. 1a) where we measure the rate of interest on the vertical and the quantity of capital on the horizontal axis. The s.m.p. curve will be downward sloping, representing the law of non-proportional returns,[1] and the s.t.p. curve will fall too, though not so steeply. The intersection of these two curves determines long-period equilibrium. In a progressive economy we are to the left of this point, in a regressive economy to the right. The two curves determine the rate of interest in long-period equilibrium; in a progressive or regressive economy they only set the approximate limits within which the rate of interest must be determined by the equality of the rate of saving and the rate of investment. Let us consider the special case of short-period r, with a total quantity of capital: $O\,r$, and a short-period of 6 months as our unit of time. We can then draw a new diagram (fig. 2) measuring the rate of interest on the y axis as before, but on the x axis we measure net investment (net saving) per unit of time: ΔK, instead of the quantity of capital: K. Having estimated the ratio $\frac{\Delta K}{K}$ to have the approximate value $\frac{1}{100}$,[1] if we want to get a picture comparable to fig. 1, the unit of ΔK must be a hundred times smaller than the unit of K. In this plane we can redraw the s.t.p. and s.m.p. curves: they will be minute portions of the two curves of fig. 1 at point r, magnified in the horizontal direction. (Because of the difference in the horizontal scales in figs. 1 and 2.) As this reduces the slope of the curves a hundredfold, both will be virtually horizontal.

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[1] When the quantity of capital is increased—that of other factors being kept constant—its marginal productivity must fall.

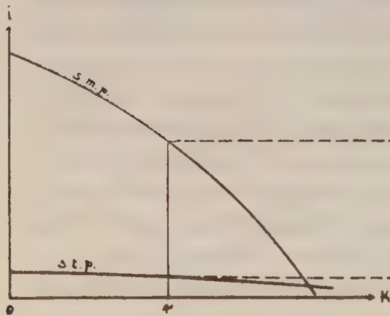

fig. 1.

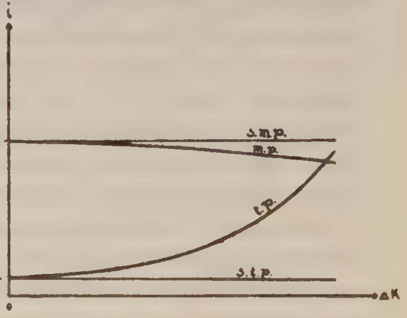

fig. 2.

At this stage a further elucidation of the exact relationship of the two diagrams becomes necessary. So far it seemed that fig. 2 is just a distorted (horizontally magnified) reproduction of a thin slice of fig. 1 along the vertical line erected in point T. While this interpretation is correct, a glance at the horizontal s.t.p. and s.m.p. lines suggests that this alone would not justify the drawing of another diagram. The two curves of fig. 1 belong to the realm of comparative statics: different points on them represent alternative situations (different quantities of capital equipment), without paying attention to the problems of transition. Fig. 2 aims at remedying this defect, and different points in its plane represent not only different quantities of capital, but also different rates of investment and saving. (More correctly: volumes of investment and saving per unit of time.) The fact, however, that the s.t.p. and s.m.p. curves are virtually horizontal in fig. 2 suggests that the first interpretation of $\triangle K$ can be neglected in the short run: in other words *we can treat the quantity of capital equipment as fixed when analysing the rate of investment and the rate of saving in the short period.*

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[1] See page 300, footnote 1. To be exact, we estimated, not the ratio of the quantity of net investment per unit of time to the total quantity of existing capital equipment, but the ratio of their values. The two, however, must be approximately the same.

It will now be obvious that the s.t.p. and s.m.p. curves, belonging to the realm of comparative statics, have no place in fig. 2. They have been drawn to illustrate the above argument, but they have a real existence only at their point of intersection with the ordinate axis, for it is only there that time preference and marginal productivity are stationary. The "dynamic" t.p. and m.p. curves will have to start from these points, and the time preference curve will now be drawn with an upward slope, representing the rate of saving as an increasing function of the rate of interest. The marginal productivity of capital is an increasing function of the marginal productivity of the physical capital good and a diminishing function of the replacement cost of that capital good. When investment activity increases, the opportunity cost of capital goods will rise,[1] but the marginal productivity of the capital goods themselves may either rise or fall, according as capital-good industries are less or more labour-saving than consumption-good industries. The combined effect of these two factors may make the marginal productivity curve slope upwards as well as downwards. There is no indication of Böhm Bawerk or of any other real capital theorists having been aware of this complication; so if we wanted to represent their theory truthfully we would have to draw the m.p. curve as a horizontal line. But to emphasise the fact that marginal productivity depends on investment activity as well as on the quantity of capital, we shall make the curve slope downward. There are two reasons which make this more probable than a rising m.p. curve. Firstly, many forms of investment activity—like residential and industrial building, rail-road and other construction—are notoriously labour-intensive; secondly, real wages usually rise with increasing employment.[1] So in fig. 2 we get a t.p. curve which is rising and a m.p. curve which may be either rising (though not so steeply) or falling; and their intersection, according to real capital theory, determines the rate of interest and the volume of saving and investment per short period.

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[1] Only if the factors of production are combined in different proportions in the capital-good and consumption-good industries respectively. We are, of course, assuming full employment here, but for future reference the reader's attention may be drawn to the fact that the result of this analysis: namely that the marginal productivity curve may equally rise or fall with investment activity, is true also when we do not assume full employment.

It is best to think of these two curves as being the sum of two components: one (illustrated by the s.t.p. and s.m.p. lines of fig. 2) depending on the quantity of capital in existence and practically fixed within the short period, and the other (given by the vertical difference between the t.p. and s.t.p., and the m.p. and s.m.p. curves, respectively) depending on the rate of capital accumulation. Mr. Lerner seems to have been the first to realise that the marginal productivity of capital is a function not only of the quantity of capital, but also of its rate of accumulation.[2] He separated the two components in a fashion somewhat similar to ours and called our marginal productivity of capital the marginal efficiency of investment, reserving the first name for our stationary marginal productivity. What he has not realised, however, is that while the s.m.p. curve is always downward-sloping—because of the law of non-proportional returns—this is not necessarily true of the marginal productivity curve (his marginal efficiency of investment). It is indeed curious how long this fact has gone unnoticed. Economists have assumed the marginal productivity of capital to be a function of its quantity and of its construction cost, and considered relative demand for goods embodying capital in varying proportions as among the "other things being equal"; not noticing that a faster capital accumulation itself may constitute such a change in relative demand. The importance of this singular omission is not to be minimised, for it contains the simplest and most orthodox explanation of why real wages so often rise in prosperity and why sometimes the marginal productivity of capital rises with investment activity.

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[1] As a rule, increasing employment means an increase in the relative importance of investment industries. If investment-good industries are more labour-intensive than consumption-good industries this will cause a *rise* in the marginal productivity of labour in exactly the same way as a shift in consumers' demand from motor-cars and wireless sets to butlers and maids would increase the marginal productivity and hence the earnings of labour. The argument is not affected by the fact that the shift from consumption to investment is not absolute but only relative, and it remains true—though the effect may be less strong—when marginal labour cost curves are rising in each industry.

[2] A. P. Lerner: "Capital, Investment and Interest." Manchester Statistical Society, Group Meetings, 1936–1937.

The theory of this paper differs from the above formulation of real capital theory in that it takes account of risk and introduces money. In order to restate the argument of Part I in terms of the above two diagrams we shall have to relinquish our general system of any number of different kinds of securities and retain one distinction only: that between long- and short-term capital. The individual investor can choose between holding his wealth in long-term securities or in money, while we shall assume that short-term capital is provided exclusively by the banking system. Furthermore we shall also assume that the quantity of securities and of capital goods is closely correlated, so that we can interpret K as an index both of the stock of securities and of the community's capital equipment.[1] We can then (fig. 1a) draw the two curves of fig. 1 in exactly the same way as we have drawn them above. But in addition we now have a third curve which may be called the security preference curve, showing the quantity of securities (capital) the community is willing to hold at each rate of interest. This is not identical with the s.t.p. curve which shows that interest rate at which the community's expenditure exactly equals its income, for now there are two alternatives to holding capital: spending it and *holding money*.[2] As money is only held when there is uncertainty and risk, the yield of securities must include a premium on bearing risk. Therefore the security preference curve will be higher than the s.t.p. curve. Moreover, given the quantity of money, it will be slightly upward-sloping, because an increase in the quantity of securities means an increase relatively to the quantity of money.

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[1] This is a rather drastic simplification and excludes many important problems, which, however, I believe to be at an altogether lower level of abstraction and therefore outside the scope of this article. The most important of these is the effect on the rate of interest of investments that are financed, not through the capital market, but e.g., out of undistributed profits. It has been pointed out to me by Mr. Melvin Reder that on the basis of the above theory such investments would *lower* (instead of raising) the rate of interest by increasing the demand for securities, without at the same time increasing their supply.

[2] Security preference is identical with the demand for holding (the stock of) securities. It has been renamed, so as not to confuse the reader with the paradoxical shape and position of the demand curve when drawn in a plane where the ordinate represents yields instead of security prices.

Let us now draw a short-period diagram appertaining to the quantity of capital: Or (fig. 2a). The m.p. curve will have the same shape as before, though we must remember that it could, and sometimes does, rise instead of falling. In a risky economy investment will not be pushed to the point where the marginal productivity of capital is equal to the market rate of interest, but only to the point where marginal productivity *minus* marginal risk is equal to it. This principle, first stated by Mr. Kalecki, has been described in detail on several occasions—which makes it unnecessary that we should expand upon it.[1] To summarise it shortly we can say that there is a risk of new investment turning out unsuccessfully, and this risk increases with the number and size of investments started per unit of time. It ties up the liquid funds either of the investing entrepreneur himself, or of the bank that gave him advances, or of the promoter who is going to float his securities, *until the securities are floated.*[2] The cost of bearing this risk—either in the form of interest on the bank-advances, or in the form of promoter's premium, or as a bonus to the entrepreneur for risking his own liquid funds—is an initial cost of investment; as such it enters into the cost of securities, and hence causes the investment curve to fall more steeply. The " additional steepness " of this marginal-productivity-cum-marginal-risk curve (hereafter called investment curve) depends on the policy and liquidity of the banks.

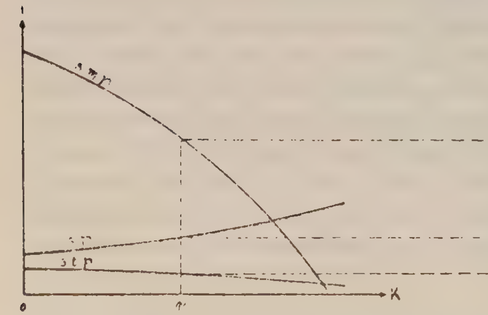

Fig. 1.a.

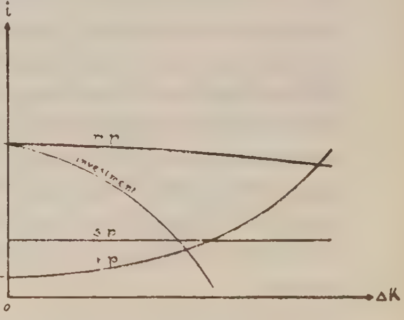

Fig. 2.a.

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[1] M. Kalecki: " The Principle of Increasing Risk," ECONOMICA (N.S.), vol. 4; J. M. Keynes: " The ' ex ante ' Theory of the Rate of Interest," *Economic Journal*, vol. 47; and N. Kaldor: " Capital Intensity and the Trade Cycle," ECONOMICA (N.S.), vol. 6, February, 1939.

[2] Securities are usually floated when the new concern is already going. If they were floated before " construction " began, the initial risk would have to be borne by the purchasers of the securities and the entrepreneur would have to pay for initial risk-bearing throughout the life of the securities. He usually finds it cheaper to pay a high initial cost for initial risk-bearing and to get his long-term capital at a lower rate of interest.

The time preference curve presents no new problems and can be drawn as it was drawn in fig. 2.

The security preference rate depends only upon the quantity of securities and the quantity of money and is therefore independent of the rate of accumulation—as long as we assume full employment. So we can draw it as a virtually horizontal straight line.

The problem now arises: what happens if the investment curve cuts the s.p. curve as shown in fig. 2a? Clearly, their intersection must determine the market rate of interest, but at that rate, saving—shown by the t.p. curve—exceeds investment. As this cannot lower the rate of interest directly, it must lower the level of income until savings become equal to investment. We could draw a family of t.p. curves corresponding to each level of income, but we prefer to retain the one only which corresponds to full employment, so that we can use the (horizontal) distance between this curve and the point of intersection of the s.p. and investment curves as an index of unemployment. We must be careful now, because the two other curves were also drawn on the assumption of full employment. But redrawing them will not be difficult, because the family of t.p. curves assigns a definite level of employment to each point of the plane. We have first to draw the family of t.p. curves and the family of investment curves, and join together the points where two curves corresponding to the same level of employment cut each other. This will be our new investment curve. We then repeat the same procedure with the family of t.p. and s.p. curves and get our new s.p. curve. The investment curve will retain its main features, so we shall not bother to describe its transformation. The new s.p. curve on the other hand will now be slightly rising, because the higher the level of income, the smaller is the quantity of money available as an alternative to holding securities. Fig. 2b represents the redrawn diagram. The intersection of the investment and s.p. curves

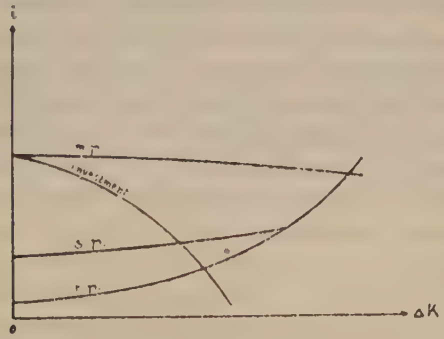

fig 2 b

determines investment activity, the rate of interest and the level of employment. The first two can be read off the two axes, the level of employment can be judged by the horizontal distance between the point of intersection and the t.p. curve which is purely hypothetical and only shows what saving would be if there were full employment.

A comparison of figs. 2 and 2b will show that the introduction of risk and money has made the investment curve steeper and the demand-for-securities curve less steep. The former is due to the fact that in a risky economy marginal risk must be deducted from marginal productivity, the latter to the substitution of security preference for time preference as demand for securities. In Part I it has been described in some detail why security preference—which is identical with stockholders' demand—must be represented by a flat curve. This can now be elucidated yet further.

Our demand for an ordinary commodity is a diminishing function of price not only because its marginal utility to us falls as we get more of it, but also because to be able to buy more of it we must restrict our purchases elsewhere. In other words, as we buy increasing quantities of a particular good its marginal utility falls and the marginal utility of our expenditure on everything else (loosely called the marginal utility of money) increases ; and price is defined as the ratio of the marginal utility of the good in question to the marginal utility of the rest of our income.

Investment adds to the community's stock of securities and thereby reduces its marginal utility, but it will increase the marginal utility of expenditure *only* when it involves real abstinence, i.e., when there is full employment. When there are unemployed resources in the economy, increased investment will not necessitate a " restriction of purchases elsewhere ", indeed consumption usually increases *pari passu* with investment, so the demand price for securities will not fall because the marginal utility of expenditure increases, but only because the marginal utility of securities falls—and we know that new securities produced during the short period are such a small fraction of the total stock that this effect is practically nil. From the individual's point of view, of course, buying a security does imply restricting consumption. But the communal demand curve for securities is not a simple sum of the individual's demand curves, as these are not independent of each other.

The above argument also implies that when there is full employment the t.p. curve comes into its own again ; that is the reason why in fig. 2b we have not continued the s.p. curve beyond its intersection with the t.p. curve. This can also be expressed by saying that the t.p. and s.p. curves coincide beyond their meeting point. For once full employment is reached, any attempt at increasing investment beyond saving will result in sharply rising prices and costs which, by increasing the transaction demand for money, will send up interest rates in the second-hand market. Of course, as there is no definite point where full employment begins and under-employment ends, so the kink in the s.p. curve will not be a mathematical kink either.

We have now completed the restatement of our main argument. This formulation of it is less general than the first, admitting one kind of long-term security only, but it simplifies the consideration of specific problems. For example, a rise in the marginal efficiency of capital can be represented in fig. 2b by a rise in the investment curve, and we can read off immediately that this will increase investment activity and the level of employment, and raise the market rate of interest. An increase in the quantity of money causes the s.p. curve to fall and the investment curve to become less steep.[1] The greater the community's confidence in the liquidity and risklessness of the securities, the smaller will be the shift in the s.p. curve. In the limiting case an increase in the quantity of money would only affect the investment curve. This shows how changes in the quantity of money can cause changes in the level of investment and employment *via* the short-term rate and without affecting the long-term rate of interest at all.

[1] The latter because the increased liquidity of the banks induces them to charge less for initial-risk-bearing. This effect need not manifest itself in a fall of the short-term rate; the banks have also other means at their disposal for restricting credit than raising its price, and their increased liquidity may just induce them to be more generous in their credit policy.

Advertising and the Maximisation of Profit

By E. K. ZINGLER

THE purpose of this note is to extend the analysis of advertising and the maximisation of profit by 1/ the consideration of advertising separately from the aspect of the individual firm and from the aspect of the total industry, and 2/ the division of advertising into two parts one of which is referred to as quantity-increasing—the assumption is that its purpose is to sell a greater quantity of a commodity at the same price—and the other is referred to as price-increasing—the assumption is that its purpose is to sell the same quantity of the commodity in question at a higher price.[1] An example of the former kind of advertising is that of the automobile industry where the idea is to sell as many automobiles as is possible at a given price. On the other hand an example of the latter would be that used in connection with a limited supply of rare old wines and liquors where the idea is to sell at the highest possible price; or in the case where a producer wishes to raise his price for one reason or another (recent war, etc.) and is forced to educate the public to continue to buy the same quantity at the new price. The analysis will be carried out by first considering the most general form of the total profit function and then considering some of the problems that arise.

Assume 1/ that price, P, is a function of the form $P=P(x,x',m,m')$ where x is the output of the individual firm, x' is the output of the total industry, m is the amount of price-increasing advertising carried on by the individual firm, and m' is the amount of the same kind of advertising carried on by the total industry; 2/ that the quantity sold (which will be identified with the quantity produced), x, is a function of the form $x=x(P,s,s')$ where P is the price of x, s is the amount of quantity-increasing advertising carried on by the firm, and s' is the amount of the same kind of advertising carried on by the industry; 3/ that the total cost of production of the firm, C, is a simple function of the output of the individual firm and of the total industry or $C=C(x,x')$; 4/ that the total expense of the "quantity-increasing" advertising of the firm, S, is a function of the form $S=S(s,s')$ or a function of the amount of quantity-increasing advertising carried on by the firm and by the industry; and 5/ that the total expense of the "price-increasing" advertising of the firm, M, is a function of the form $M=M(m,m')$ or a function of the amount of price-increasing advertising carried on by both the firm and the total industry.

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[1] Compare this with Shone's Allocated Expenditures which vary directly with output and his Unallocated Expenditures which may be incurred in any form, increased or decreased, in order to alter price and output of the product defined by allocated costs. Shone, "Selling Costs," *Review of Economic Studies*, June, 1935, p. 225. Quantity-increasing and price-increasing advertising used in this note would both be included in Shone's Unallocated Expenditures. His Allocated Expenditures are not expressly mentioned, but it is assumed that they are included in the ordinary costs of production.

Accordingly the total profit function becomes $xP—C—S—M$. To obtain conditions of maximisation for this function (maximise profits), it is necessary to differentiate with respect to each of the independent variables and set the resulting partial derivatives equal to zero. When this is done the following equations result:

$$(1)\quad P+\frac{x\partial P}{\partial x}=\frac{\partial C}{\partial x}$$

$$(2)\quad \frac{x\partial P}{\partial x'}=\frac{\partial C}{\partial x'}$$

$$(3)\quad \frac{P\partial x}{\partial s}=\frac{\partial S}{\partial s}+\frac{\partial x}{\partial s}\cdot\frac{\partial C}{\partial x}$$

$$(4)\quad \frac{P\partial x}{\partial s'}=\frac{\partial S}{\partial s'}+\frac{\partial x}{\partial s'}\cdot\frac{\partial C}{\partial x}$$

$$(5)\quad \frac{x\partial P}{\partial m}=\frac{\partial M}{\partial m}$$

$$(6)\quad \frac{x\partial P}{\partial m'}=\frac{\partial M}{\partial m'}$$

The first maximising equation states that the output of the individual firm is varied until the increment in total revenue resulting from it is just equal to the increment in total cost of production. The second equation states the same thing but refers to the output of the total industry. The third equation states that the amount of money spent by the firm on quantity-increasing advertising is so varied that the increment in total revenue resulting from it is just equal to the increment in the total cost of that kind of advertising plus the corresponding increment in the total cost of production due to the additional output resulting from the advertising. The fourth equation states the same thing but refers to the expenditure of the total industry on quantity-increasing advertising. The fifth equation states that the amount of price-increasing advertising carried on by the individual firm is so varied that the increment in total revenue resulting from it is just equal to the corresponding increment in the total cost of that kind of advertising. The last equation states the same thing but refers to the amount of price-increasing advertising carried on by the total industry.

For the profits of the individual firm to be fully maximised, all six of these equations must be satisfied simultaneously. When this occurs, the total combined marginal revenue of the firm is equal to its total combined marginal cost of production and advertising, and profits have reached their highest value. Ordinarily, however, the firm has no control over the output and advertising of the total industry unless it be a one-firm industry, which is very rare or unless it is part of a monopolistic group. Consequently the firm can never maximise its profits perfectly except by accident, which is highly improbable. Nevertheless from the viewpoint of the individual firm, output and advertising of the total industry are constants, and accordingly it is permissible to speak of the profits of the firm being at a relative maximum or being maximised for all practical purposes.

Finally there are two problems that need to be briefly analysed, namely, 1/ what is the effect of advertising on the price and output of the individual firm ?, 2/ what is the effect of a change in the output of the total industry on the price and cost of the individual firm and which of these two variables is affected more ?

To answer the first question it is necessary to examine equations (3) to (6). Equation (3) can be written

$$(3)\quad \frac{\partial x}{\partial s} = \left[\frac{\partial S}{\partial s} + \frac{\partial x}{\partial s}\cdot\frac{\partial C}{\partial x}\right] / P.$$

The numerator of that fraction will in all but highly exceptional (*non ceteris paribus*) cases be positive since the total cost of advertising will increase as more advertising is resorted to and likewise the total cost of production will increase as a greater quantity is produced even though the per unit cost of advertising and of production fall. Theoretically the numerator can take any value from zero to infinity, in which case a small change in advertising and output of the firm will either have no effect on the total cost of production and advertising or else will have a very significant effect. On the other hand, the denominator, P or price, can take any positive value greater than zero and consequently the value of the fraction can vary from zero through positive values to infinity. Thus quantity-increasing advertising can theoretically increase the volume of sales by any amount from zero up, but for all practical purposes there will be a very restricted range in which it will pay to do so.

The same conclusion applies to equation (4) and upon examination will be found to apply to equations (5) and (6). However, in the latter two cases, the conclusion will be that price-increasing advertising can theoretically change price from any amount from zero up although there will be a very limited range in which it will be profitable to do so.

To answer the second question it is necessary to analyse the second maximising equation which is

$$(2)\quad \frac{x\partial P}{\partial x'} = \frac{\partial C}{\partial x'}\ .$$

As the output of the total industry increases, the price, P, will fall except in the special and exceedingly rare case in which a portion of the demand curve is positively sloping, in which case the price will rise, or in which a portion of the demand curve is parallel to the quantity axis, in which case the price remains constant. On the other hand, the total cost of production of the firm will rise or fall (or may remain constant) according as the industry is operating under conditions of net external diseconomies or net external economies.

The latter half of the question can be easily answered if equation (2) is put in the following form

$$(2) \quad \frac{\partial P}{\partial x'} = \frac{\partial C}{\partial x'} \Big/ x \, .$$

It is obvious that the total cost of production of the firm will vary much more than price, for price only varies by the amount of variation of total cost divided by the output of the firm. Accordingly the larger x is, the smaller will be the effect of a change in x' on price, and vice versa.

Monthly Unemployment Records[1] 1854-1892

By MARIE DESSAUER-MEINHARDT

SERIES of British unemployment figures for the 19th century are scarce. The only available continuous records from 1850 onwards are yearly figures of Trade Unions which granted benefits and in consequence kept registers to be signed regularly by the unemployed. Some Unions agreed to pass this statistical material on to the authorities and in the course of time more and more Trade Unions were urged to do so. A combined series giving the percentage of these unemployed was first published in an appendix to the evidence of Llewellyn Smith before the Select Committee on Distress from Want of Employment.[2] These are yearly figures from 1851 and monthly ones from 1888 (and a graph starting in 1887 by monthly intervals). The first figure in 1851 is 3·9 per cent. and represents roughly 450 men. Regarding the monthly table Llewellyn Smith remarks[3]: " I could not give any figures bearing on the cyclical periods of employment before (1887), because the collection of these figures was non-existent. The first time the Board of Trade collected these figures was in 1887 ". The records were reprinted and used again as the only available source in various Government publications, as for instance in the Second Series of Memoranda on British and Foreign Trade and Industry (Financial Blue Books), and were further used by Sir William Beveridge in his *Unemployment, a Problem of Industry*,[4] and by Pigou in his *Industrial Fluctuations*.[5] No monthly figures covering earlier years to assist precise trade cycle research were known to be available.

In this connection the Annual Reports of the Friendly Society of Iron Founders, covering the years 1884–1892,[6] seem to be of interest, because they give a compilation of monthly unemployment records from 1854.

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[1] These figures have been found in the course of a general investigation into statistical material available for trade cycle research covering the 19th century. The investigation has been undertaken by the Economic Research Division of the London School of Economics and is directed by Professor F. A. v. Hayek. In this connection another series of half-yearly unemployment figures, 1848–1859, taken from Poor Law Reports was published in *The Economic History Review*, Vol. X, No. 1, p. 38.

[2] *B.P.P.*, 1895, IX (365), App. 28, p. 547.

[3] *B.P.P.*, 1895, IX (365), Qu. 4834, p. 75.

[4] London, 1930, pp. 18 and 42.

[5] London, 1927, p. 353, Table I.

[6] As a consequence of difficulties of access to libraries and archives during wartime, I could not get hold of other volumes or records.

The origin of the Friendly Society goes back to 1809 when " a few moulders met and formed the Society for the purpose of mutual relief in cases of old age, sickness and infirmity and for the burial of the dead. Trade combinations were still forbidden by law so that all mention of trade objects was carefully excluded from the Rules ".[1] At that time " there was no out of work allowance. Members out of employment were always supposed to travel in search of it and were only furnished with a travelling card entitling them to a supper, bed and pint of beer with 2s. in money at each stage ".[2] A weekly allowance for unemployed members—the donation benefit—was substituted for the travelling allowance in 1854, the year in which the monthly statistics start. In general the Society kept statistics from 1831, but as " the very existence of the Trade Society had to be concealed, the books were often buried for safety," and there seem to be no continuous unemployment records (i.e., records of the number of members on travelling allowance) available before 1854.

The history of the Friendly Society is typical for British Trade Unions in the 19th century and the computation of its unemployment records is based on the same principles as the official Trade Unions' series, explained by Llewellyn Smith[3] and Sir William Beveridge.[4] Consequently the records reprinted on p. 325 can be continued by the Trade Unions' series from 1888, as they express the same developments ; but they suffer also from the same errors and incompleteness. Here two points should be noted :

(1) The Annual Reports of the Iron Founders Society mention that in times of stress followed by unemployment the membership declined because workers on half pay or with part of their family out of work were no longer able to pay their contributions. After times of depression the membership rose conspicuously, as in 1859, 1864, 1871 and 1888–89 since the advantages enjoyed by those who were members during unemployment periods had impressed others.

(2) Unemployment benefit was granted only after a certain time of membership and only for a certain period of unemployment. The members on the unemployment list but not on the benefit list are not contained in the figures given in the table. The Annual Reports give these additional figures in a few isolated cases : they mention 125 unemployed not entitled to benefits for 1891, i.e., 13·2 per cent. of the figures in the table, and 227, i.e., 12·3 per cent., for 1892. No constant or proportionate figures can be added to correct the tabulated unemployment figures, because in the first place the growth of the membership was dependent on the conditions of trade, on occasional canvassing campaigns and on the success of the Trade Union movement at different times. In the second place during a long period of depression the number of unemployed no longer receiving benefits

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[1] 82*nd Annual Report*, 1891, p. 18.

[2] 82*nd Annual Report*, 1891, p. 20.

[3] Sir Hubert Llewellyn Smith, op. cit., pp. 46–84.

[4] Sir William Beveridge, op. cit., pp. 17–19.

tends to increase. Llewellyn Smith[1] and Sir William Beveridge[2] remark that the Trade Unions were urged by the Board of Trade to state the total number of unemployed, whether receiving benefit or not, and both authors consider the error resulting from this deficiency as negligible. Possibly the Iron Founders Society was just one of the few Trade Unions which stated only the number of those in receipt of benefits.

A comparison of the unemployment curve of the Friendly Society of Iron Founders with that of the Trade Unions shows a close correlation and seems to prove, as the description and history of the two curves indicate, that a combination of the two series into a monthly uninterrupted curve from 1854–1940 is justified. The Iron Founders series can easily be expressed as a percentage of the yearly membership. Certain developments peculiar to the Iron Founders Society which are reflected in the curve may still have to be smoothed out. For the period over which the two curves can be compared that of the Iron Founders Society proves to be the more sensitive one, which is not astonishing as it represents unemployment in the pig iron industry only.

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[1] Sir Hubert Llewellyn Smith, op. cit., Qu. 4568, p. 516.

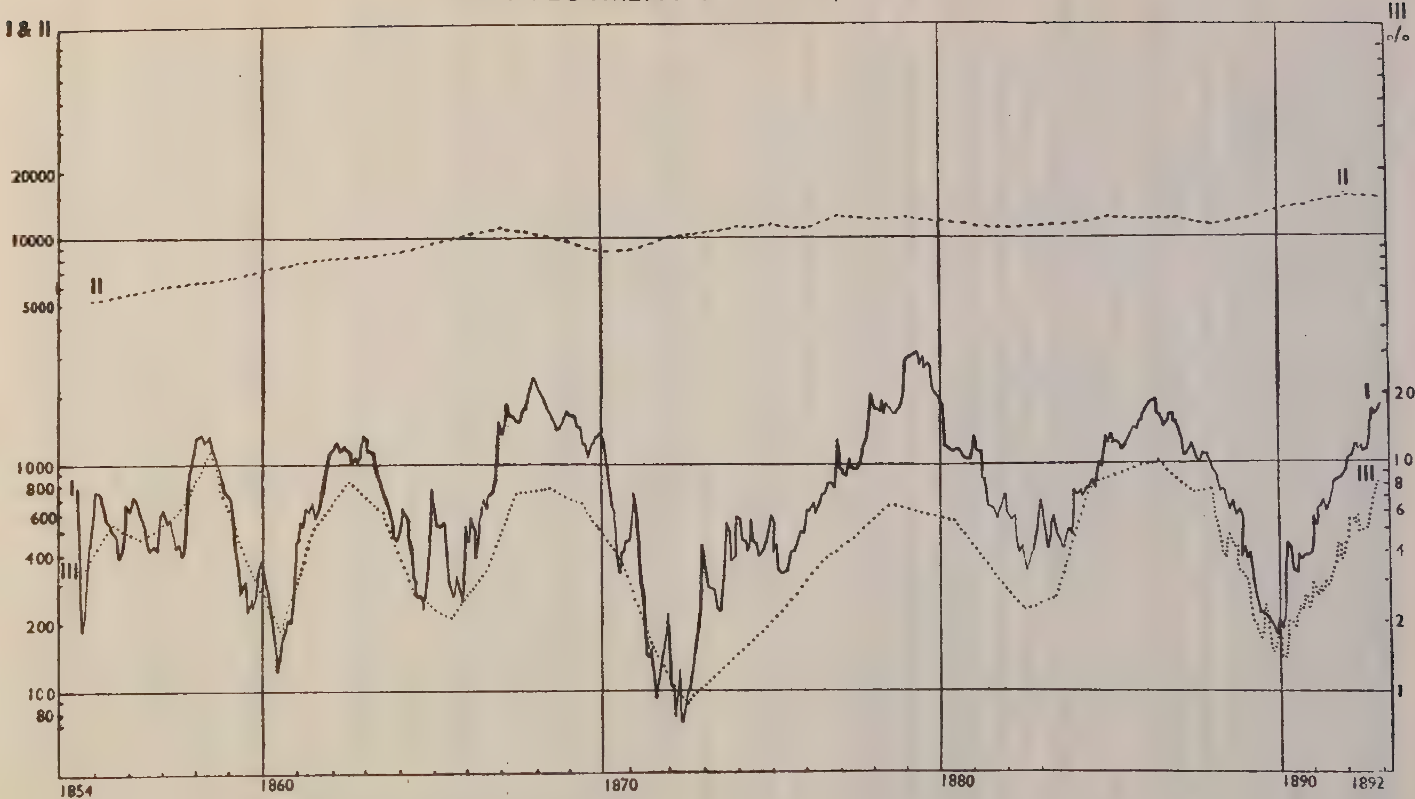
[2] Sir William Beveridge, op. cit., p. 19.

FRIENDLY SOCIETY OF IRON FOUNDERS. ANNUAL REPORT, 1892.

NUMBER OF MEMBERS UNEMPLOYED AT THE END OF EACH MONTH.

Years.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	No. of Members end of year.
1854							798	272	189	258	403	537	5,335
1855	594	761	759	682	550	544	497	483	386	434	499	670	5,685
1856	625	724	693	582	550	445	411	435	415	488	526	602	6,116
1857	623	585	540	545	507	461	429	433	394	506	885	1,139	6,421
1858	1,302	1,333	1,343	1,285	1,322	1,160	1,042	939	864	788	759	746	6,637
1859	708	595	442	355	277	304	224	257	244	270	333	371	7,317
1860	296	238	192	162	123	184	177	204	206	226	291	441	7,973
1861	476	555	525	635	626	684	564	646	778	875	1,015	1,137	8,229
1862	1.194	1,253	1,162	1,209	1,195	1,126	1,010	1,078	1,027	1,133	1,257	1,350	8,458
1863	1,318	1,185	1,162	998	900	806	705	681	647	580	469	445	8,840
1864	533	642	595	464	408	307	264	269	244	319	405	783	9,723
1865	532	523	525	465	342	295	260	323	277	271	249	525	10,604
1866	448	578	516	385	547	700	640	703	752	818	1,018	1,532	11.121
1867	1,375	1,467	1,703	1,848	1 641	1,603	1,562	1,520	1,715	1,776	2,054	2,442	10,839
1868	2,381	2,236	2,104	1,964	1,752	1,641	1,536	1,503	1,434	1,456	1,548	1,715	9,853
1869	1,693	1,665	1,620	1,491	1,448	1,284	1,248	1,097	1,203	1,239	1,339	1.376	8,990
1870	1,300	977	782	648	453	403	334	392	441	445	500	745	8,994
1871	653	508	335	262	154	146	156	119	92	138	113	224	10,019
1872	109	109	94	78	126	72	88	102	130	185	262	433	10,634
1873	349	301	287	272	230	222	335	555	489	373	382	591	11,512
1874	568	450	455	411	566	451	448	398	417	443	455	592	11,925
1875	553	408	425	340	335	335	401	412	441	500	499	615	12.336
1876	608	607	612	672	593	652	706	723	803	808	777	1,299	12,627
1877	965	939	883	871	1,060	959	934	989	1,207	1,373	1,554	2,061	12,612
1878	1,768	1,799	1,712	1,921	1,673	1,835	1,710	1,660	1,676	1,757	1,976	2,615	12,620
1879	2,916	2,993	3,090	3,189	2,781	2,917	2,673	2,794	2,776	2,602	2,206	2,043	12,276
1880	1,862	1,563	1,338	1,205	1,195	1,149	1,159	1,185	1,176	1,078	1,068	1,185	11,580
1881	1,330	1,247	1,167	1,155	869	851	740	654	630	606	566	740	11,201
1882	625	584	598	506	404	431	364	391	414	463	505	690	11,448
1883	416	547	594	493	477	424	454	511	506	499	480	786	11,917
1884	723	746	713	787	782	833	775	925	1,004	971	1,217	1,346	12,418
1885	1,267	1,382	1,243	1,259	1,211	1,133	1,212	1,328	1,466	1,444	1,575	1.684	12.376
1886	1,748	1,858	1,879	1,908	1,645	1,599	1,476	1,543	1,648	1,678	1,535	1,552	12,037
1887	1,486	1,396	1,223	1.088	1,103	1,260	1,087	1,039	1,128	1,106	1,104	1,066	11,718
1888	913	891	758	765	700	620	690	597	617	582	394	430	12,202
1889	382	408	303	260	224	213	220	217	208	198	164	200	13,805
1890	184	185	452	435	401	336	335	404	386	395	397	402	14,821

UNEMPLOYMENT RECORDS, 1854-1892.



LEGEND :

LOGARITHMIC SCALE.

Curve I. Number of Unemployed, Friendly Society of Iron Founders, end of month.
Curve II. Number of Members, Friendly Society of Iron Founders, end of year.
Curve III. Percentage of Unemployed, Trades Unions, yearly 1854–1887, monthly 1888–1892.

Book Reviews

Prices and Wages in England from the Twelfth to the Nineteenth Century: Vol. I, *Price Tables: Mercantile Era.* By SIR WILLIAM BEVERIDGE with the collaboration of L. Liepmann, F. J. Nicholas, M. E. Rayner, M. Wretts-Smith and others. Longmans, Green and Co. 1939. lx + 756 pp. with two folded tables. 31s.

This volume is the first of the English series of the international study of the History of Prices initiated *circa* 1929, mainly by Professor E. F. Gay and Sir William Beveridge. Several volumes have already appeared for other countries, including one relating to Germany, by Dr. M. J. Elsas, and a second by the same author, the copies of which are at the moment marooned in Holland.

The publication before us, bulky as it is, is only the first of four, and ostensibly consists of preliminary tables of prices, other than wheat prices, in the period 1550 to 1830. The next will deal with the earlier period, 1150 to 1550, the third with wheat prices and wages, and the fourth and last with a general review and summary of the results. It is understood that the remaining volumes are in an advanced stage of preparation.

The whole undertaking is of special interest to members of the London School of Economics, since for some ten years the work was carried on in secluded rooms in the School buildings, and some of the problems, such as the difference between the heaped-up and the rased (or stricken) bushel, were discussed in Common Room. There have been many activities with which the School has been closely connected, and this series, if circumstances allow its completion, may well rank as one of the major achievements of those who have worked in its composite organisation.

Till the appearance of this volume the principal source of information, and the only one available to the general student of prices, was Thorold Rogers' *Six Centuries of Work and Wages* and *A History of Agriculture and Prices in England.* The new investigation differs in range, method and completeness. As regards range we have seven instead of six centuries; for completeness a vast amount of material unknown to Thorold Rogers has been brought to light, largely through the help of Dr. Hubert Hall. The more significant difference is, however, in method. "The essential advance made by Thorold Rogers on former writers lay in basing his history of prices on contemporary documents. The principal difference of method between the present investigation, also confined to documents, and that of Thorold Rogers, lies in basing the study on a limited number of series of prices recorded year after year in the same place for the same purpose, instead of throwing together isolated data from disconnected and varying sources."

Whether the new method of procedure will lead to substantial modifications of Thorold Rogers' results or not cannot be known till we have the final volume ; but there is no doubt that it is the more accurate and scientific. As is shown in the detailed accounts, there is great variation in weights and measures between districts, there are differences of quality and differences of custom relating to the terms of sale. To take an example :—on pages 698–701 there are tabulated the prices of some thirty commodities averaged over the years 1720–1744. Here is one group.

Cheese.

Westminster	4·00s	per doz. lb.	Gloucester
Greenwich Hospital	2·98s	,, ,,	,,
Chelsea Hospital	3·56s	,, ,,	,,
Lord Steward	4·25s	,, ,,	,,
Sandwich	1·51s	,, ,,	Suffolk
Navy Victualling, London	1·38s	,, ,,	,,
Sandwich	3·47s	,, ,,	Cheshire
Lord Steward	5·99s	,, ,,	,,
Navy Victualling, London	2·78s	,, ,,	,,

It is clear from this illustration that an isolated price of cheese would tell us nothing that we could use, and the necessity for restricting the study to comparable series is manifest. The whole problem is closely akin to the study of changes of wages. There also many differing statements may be made, all of them correct in their context, of the week's wages for a named occupation ; but over a run of years it is often possible to get a trustworthy estimate of the rate of change, and then disparate series can be linked together for longer periods. It appears that similar methods will be used in the final summary of price changes.

When approaching this volume the reader may be recommended to read the very informative General Introduction, and having become familiar with the nature of the data (often themselves of considerable interest) to turn to the Tables of " price-relatives," pp. 702 seq. Here are shown in a simple form the course over the centuries of such prices as are given in the extract for cheese above. These Tables have interest in themselves, if only as showing the great variety in rates of change. But the reader is warned against the construction of general index numbers. " Price-relatives for single commodities, rather than index-numbers for commodities in combination, are the main objective. Index-numbers do not appear in any of the first three volumes ; their construction over periods as vast as those covered by this history presents problems of weighting for which there is no easy, indeed no general, solution."

A. L. BOWLEY.

Man and Society in an Age of Reconstruction: Studies in Modern Social Structure. By KARL MANNHEIM. Kegan Paul, Trench, Trubner & Co. xxii + 469 pp. 1940. 16s. 6d. net.

The writer has been wondering why the honour of reviewing for ECONOMICA a book so important and so comprehensive in its sweep as this should have fallen to one whose primary concern has always been with education. A characteristic passage from the book itself (p. 319) may afford a clue. The author is speaking of that transmutation of social controls which must speedily be effected if the now pressing task of organising a mass-society on lines that further the ends of freedom is to be attempted without disaster. He says:

> " Just as we had first to prove that the deliberate guidance of psychological influences would not necessarily lead to greater mechanization and artificiality, so it seems to be equally important to realise that the conscious management of indirect controls, especially of organisation in terms of centralisation and decentralisation and the institution of bureaucracy, could, if rightly guided, prevent dehumanisation and guarantee the maintenance of certain attitudes."

It would not be seriously unfair to Dr. Mannheim to argue that the main teaching of his book is concentrated in that sentence. Many-faceted as it is in a way that recalls Plato's *Republic*, it is a book on education, if by that term is meant the intelligent mobilisation of all the resources of society for the making of men.

English philosophy of education, such as it is, has suffered from many defects. It has taken the collateral functioning of a secure and closely-knit society far too much for granted. In recent years at least it has limited its vision too exclusively to school and has concerned itself largely with minor adaptations of the school system designed to preserve our existing social system in face of new social pressures (as in the Spens Report for instance). Or it has carried an individualistic liberal philosophy to the limit in presenting education as a " growth " process so internalised that society is to it little more than an armoury of personal conveniences, so lacking in determinate form that the " freedom " it exalts lacks all specific quality or guarantee of positive power to achieve ends in a given order of life, and so spontaneous in its action that the normal process of what the layman would call education becomes almost an intrusive impropriety.

Some recent expositions read almost like accounts of an agreeable professional game played in happy detachment from the menacing social facts—like some Francis Drake, resolved not only to finish the play but to ignore altogether the close proximity of the Armada. We can see now that such a phenomenon is only a symptom of disorders which, as Dr. Mannheim shows, are widespread in current English thought and social functioning. On the one hand we see a society still living in terms of largely obsolete philosophies and threatened with disintegration if it does not acquire a new social consciousness, in the light of which it can plan its life as a whole so as to preserve its values in the conditions of a new age. On the other hand are specialist thinkers handling their problems competently and with great technical skill, but abstractly, with exclusive attention to details within an arbitrarily defined sphere, and tending " to forget that an age can only learn to know itself if the different methods of approach, the power of formulation, and the analysis of complex phenomena, do not lag behind the collection of data " (p. 30).

Dr. Mannheim's plea, therefore, is for a sociology adequate to remove the reproach that: " from the sociological point of view there is no scientific publicity as such. There are only the scientific publics of historians, psychologists, anthropologists, economists, and so on, which inherit many of the characteristics of human groups and very often betray all the symptoms of sectarian thinking " (p. 27).

It might be described as a thoroughgoing *historical* sociology backed by a social psychology which is genuinely what it claims to be. (He would argue, no doubt, that much of the " social " psychology which has been current until recently is little more than some version or other of an individual psychology multiplied by *n*. That too is symptomatic.) Being historical it never loses sight of the concrete changing whole; it is sceptical of the Enlightenment's doctrine of a uniform ground-plan in human nature; it has no belief in " thought as such ", uncontaminated by the influences of the historical phase in which thought happens to be working; and while it is " spiritual " enough to bring all change to the touchstone of the governing values that must at all costs be preserved, it is interested in institutions only from the standpoint of what they can *do*.

It is this pervading historical character of Dr. Mannheim's sociology which differentiates his book most sharply from Plato's *Republic* with which, in some respects, one can be daring enough to compare it. We hope to be forgiven if we again illustrate the point from the field of education.

> " The rate of transformation (of social attitudes) can indeed be accelerated, if deliberate changes in education are planned, corresponding to the parallel social tendencies in the same direction. Whereas education becomes empty preaching when there is no real situation to which it refers, it accelerates the process of transformation when it is bound up with social forces which are moving in the same direction " (p. 195).

But it would be utterly impossible, even in a lengthy review, to convey any adequate idea of the abounding wealth and rich significance of what may prove to be, quite literally, an epoch-making book. One is reminded of the old distinction between the die-hard and the doctrinaire. The first says: " The historic process went on before my time, and may go on after it, but it has jolly well got to stop while I am here." The other says: " The historic process went on before my time, but there will be no more of it, for I propose to settle the whole thing now for good and all." Stated thus baldly such attitudes seem absurd enough. But in a thousand subtle forms how potent for evil they can be! And how utterly disastrous they are at this crisis of history! It would be no bad description of Dr. Mannheim's book to speak of it as the complete and crushing answer to all this kind of thing. For this reason it is devoutly to be wished that the teaching of the book may, through various channels, filter down from the specialist readers and seep into the popular mind, especially into the political mind.

This reviewer must leave it to others to criticise competently the important concepts with which the author works. *Principia media* for example—a thoroughly historical concept, defined as " universal forces in a concrete setting as they become integrated out of the various factors at work in a given place at a given time—a particular combination of circumstances which may never be repeated " (p. 178). Or the important distinction in social forms between wide-ranging and relatively abstract " field-structures " and highly localised and concrete " situations ". Or, again, the distinction of stages of social control to each of which a characteristic form of thought-process corresponds: chance discovery, invention and planning. (A geometrical analogy is tempting here; we might speak of points, planes and solids.)

Also historical is the group of hypotheses offered as means of diagnosing the course of events in our own time:—

1. The transition from *laissez-faire* to a planned society.
2. The transition from a democracy of the few to a mass-democracy.
3. Changes (not yet fully understood) in social technique.

To economists in particular an author who argues that it was characteristic of the liberal age to leave out of control " traditional habits and customs on the one hand and the field structure of independent markets on the other " (p. 330) may prove challenging enough, especially as he claims that it is precisely in these fields that planning has now its supreme work to do. Dr. Mannheim would indeed seem to argue that we are now entering upon an age when both economics and politics as such will play a relatively smaller part in the thought and discussions of Western man. He may well prove right, but particularly in the field of economics this reviewer can claim too little competence to pursue the matter further.

We cannot close, however, without commending to the widest possible circle of readers the two final sections, " Planning for Freedom " and " Freedom at the Level of Planning ". These may well become classic for distinction of thought, eloquence which is always restrained, and a sober hopefulness which, to one reader at least, has provided a real tonic.

The book appears just when this Britain, the fruitful seed-plot of a great tradition, has become an embattled fortress dedicated to the salvation of the future. To that still productive garden of liberty Dr. Mannheim brings his fertilising genius, trained and purged in a hard school. The new growths that he so powerfully stimulates may serve not only to reveal to us " what sort of freedom, democracy and culture would be possible under an altered social system ", but as a present focus of loyalty when treachery and defection all around us bear witness to the threatened departure of every saving loyalty from the earth.

F. CLARKE.

Studies in the Theory of Money and Capital. By ERIK LINDAHL. London: George Allen & Unwin, Ltd. 1939. 391 pp. 10s. 6d.

It is with no intention to detract from the present importance of this book that we begin by saying that the strongest impression it leaves with the reader is one of intense regret that Professor Lindahl's ideas should not have become more widely accessible when they were first outlined in Swedish some ten years ago. This careful and systematic discussion of problems which then were just beginning to attract the attention of economists in many centres would have provided a common starting-point of the greatest value and would probably have speeded up progress considerably by preventing much confusion and misunderstanding, out of which we are only slowly emerging. As it was, Professor Lindahl's ideas were known to most of us only incompletely and second-hand; yet, when at last they are made available to us in full, we find that not only have they lost most of the attraction of novelty but even that what might have been a revelation to us now mostly represents a stage through which we ourselves have passed, although considerably later than Professor Lindahl, yet some time ago.

The present English version, which owes its existence to a large extent to the efforts of Professor and particularly Mrs. J. R. Hicks, consists of three main parts arranged in inverse chronological order, with an appendix on the " Problem of Balancing the Budget ". Of the three main parts the oldest is Professor Lindahl's masterly article on the " Place of Capital in the Theory of Price " (1929). Next, according to date of origin, comes a considerably abridged version of his book on the *Instruments of Monetary Policy* (1930), now under the title "The Rate of Interest and the Price Level". This was, in its original form, the second and more important of the two books on the aims and instruments of monetary policy, which, without exaggeration, may be said to have initiated the new phase of Swedish discussion of monetary problems. The first part of the new book is Professor Lindahl's most recent contribution, a re-statement of the issues involved in the modern " period-analysis " under the title

"The Dynamic Approach to Economic Theory" which the author has written for the present volume.

Although this is to-day probably a very unfashionable view, the reviewer must confess to the belief that the earliest of these three essays will prove to be of the greatest permanent value. It is the one where Professor Lindahl remains closest to the views of his master Wicksell and where he has made a very important attempt really to incorporate capital theory into the general theory of price. Perhaps it is just because the "real"—as distinguished from monetary—problems, with which Professor Lindahl has been concerned in that article, have since been less cultivated that it has preserved all its freshness.

Since then Professor Lindahl has taken an active part in the general movement away from "real" problems towards almost exclusive concern with the monetary aspects of economic problems, and indeed has become a leader in that movement. The second essay in the volume in particular will remain the *locus classicus* for the important distinction between the *ex ante* and *ex post* views of economic process which has proved of such great value in the analysis of dynamic processes, while the new first essay is undoubtedly the clearest and most systematic exposition of the modern "period analysis". It will contribute a great deal towards the clarification of these issues, at present under discussion.

F. A. Hayek.

World Wheat Planning and Economic Planning in General. By Paul de Hevesy. Humphrey Milford. Oxford University Press. 1940. 912 pp. 38s. net.

During recent years the trend of the world's wheat output has been upwards—from some 4 milliard bushels after the last war to over 5 milliard bushels to-day. There has been no rise in the average world yield per acre: the discoveries of drought-resisting and rust-resisting varieties, and other improvements, have been offset by the extension of cultivation to less fertile soils. For in almost every country the area under wheat has shown an upward trend. The United States, Canada, Australia, and Argentina together had 84 million acres in 1909–13, 124 million in 1926–29, and some 140 million in 1938. Most European importing countries gave heavy protection to their wheat-growers during the great depression, so that their acreage actually rose from 48 million in 1929 to 53 million in 1933. For the world as a whole, excepting China, the acreage has risen from some 280 million after the last war to some 370 million to-day.

But the *per capita*, although not the total, consumption of wheat has been and is steadily declining. Hence the long-run prospects of wheat-growers are not bright. During 1929–35 the world was accumulating large stocks of wheat and its price, which shows a close inverse correlation with the volume of world stocks, fell to very low levels. The same thing is likely to happen again and again during future decades unless something is done to prevent it.

If no government gave any assistance to its wheat-growers the problem would be solved. More wheat would be grown in the low-cost overseas countries. A high yield would produce a big fall in price and a low yield a considerable rise, for the demand is relatively inelastic. But a fall in price would lead to a reduction in acreage. Even in a world of subsidies and guaranteed prices, the world acreage did fall from a temporary peak of 348 million in 1931 to 331 million in 1934.

In fact, wheat is in many countries the chief cash crop of a large and politically important group of farmers. Important wheat-exporting countries have felt obliged to subsidise their wheat-growers, in one way or another, when its price was low. Important wheat-importing countries have protected their own growers by keeping out cheap foreign wheat by such devices as tariffs and quotas. During recent years the price of wheat in Paris or Berlin or Milan has been two or three times the world price. At times some of these countries have even subsidised the export of wheat: for example, in 1934 the French Government guaranteed her growers 115 francs a quintal and sold the same wheat in Liverpool and other markets at 30–35 francs. In one year alone her expenditure on export bounties and indemnities for surplus wheat denatured for feed amounted to 2 milliard francs.

Mr. de Hevesy, in his very wise and readable section on planning in general, shows himself well aware of the dangers of too much State intervention. But, he says, he is a realist. It is futile to suggest that governments should stop helping their wheat-growers; and so, in a world of monopolies, a plan must be found for wheat.

His plan is, very briefly, that each year an International Wheat Board should allot negotiable certificates to exporting countries for the export of wheat to Europe, the total of the export quotas to equal the estimated European demand for imports. This plan—unlike, for example, a minimum price or compulsory reduction of acreage—would, he thinks, be workable if the various countries agreed to it.

Certainly it would work. If every European importing country pledged itself to take only "certified" wheat there would be no temptation to a low-cost producer, such as the Argentine, to break away. The exporting countries would be able to practise discriminating monopoly, charging higher prices to Europe. Doubtless they would not receive a large part of the excess of European home prices over world prices but, as Mr. de Hevesy admits (or should one say claims?) they would get appreciably more than the world price. It would benefit them. But, since we are to be realistic, why should Europe agree? Our author tells us eloquently that the manufacturing countries of Europe are prosperous only when the overseas agricultural countries are getting high prices and can afford to buy their goods. We have heard all this before, and I for one do not believe it. It was cheap imported food which helped Great Britain to weather the Great depression with an actual rise in the total purchasing power of her working classes, and in general it is to the advantage of any European country to buy as cheaply as it can from abroad. I doubt whether even Mr. de Hevesy can persuade them otherwise.

But whether we favour his scheme or not we must all be grateful for his scholarship and industry. He gives us excellent accounts of " aspects of the agricultural policies of the nations with special reference to wheat " for forty-seven countries. Each account is followed by a valuable statistical table, prepared by Mr. Andrew Cairns, and there are 56 very useful appendices, mainly statistical. Indeed, his book is a veritable encyclopædia of the wheat problem.

F. Benham.

Statistical Testing of Business-Cycle Theories. By J. Tinbergen. Geneva: League of Nations, Economic Intelligence Service. London: Allen & Unwin. 1939. Vol. I.: *A Method and its Application to Investment Activity.* 164 pp. 3s. 6d. Vol. II.: *Business Cycles in the United States of America, 1919–32.* 244 pp. 5s. 0d.

" Man knocked down by trade cycle "—so ran the heading of a short news item. This cannot have referred to the author of these two League of Nations publications; on the contrary, Professor Tinbergen can be said to have " knocked down " the trade cycle. Professor Tinbergen's hobby, for more than a decade, has been to take trade cycles to pieces and to re-assemble them—to see how they work and to discover whether they can be improved by a little oiling here or a change in construction there. He has been willing to examine any model, from every industrial country which has produced a trade cycle, and dating back to all periods, nineteenth century, pre-war or inter-war.

Professor Tinbergen has been criticised on several scores. It is true, of course, that most of the models he has been able to inspect have been sadly defective, with some parts missing and others damaged with the passing of time. As a result, his reconstructions of their operation are necessarily incomplete and perhaps definitely inaccurate in some respects. Apart from this, it is maintained that Professor Tinbergen's work is merely of historical interest, showing up, more or less accurately, the working of a particular trade cycle. There are two replies to criticisms of this nature. Firstly, Professor Tinbergen's analysis does not confine itself to the mechanics of a trade cycle, to the way in which the cycle actually worked itself out. It is also capable of demonstrating how the operation of the cycle would have been modified if certain adjustments or structural changes had been made at the time. Secondly, while admitting that trade cycles change over time so that what is true of a past model does not necessarily apply to the current or future models, Professor Tinbergen very properly emphasises that the models change but slowly and in certain definite respects. The results established for the past, therefore, are not without bearing upon the question of improving the running of the current trade cycle; the more we know of what *could* have been done to the old models, the more we can guess of what *should* be done to the present model.

The general objects of the work under review are (1) to specify all those, and only those, variables which are significant in describing the trade cycle of a particular country and period (e.g. U.S.A., 1919–32), (2) to derive, from actual statistical material, relations (usually linear) between the variables, the relations and the variables being equal in number, and (3) to isolate the main features of the cyclical movements and to subject established trade cycle theories to statistical test in the light of the relations obtained.

The first two objects must be achieved together, step by step. Many of the relations are purely formal in character, arising from the fact that the system of variables includes some (e.g. dividends as a per cent. of capital, share price and share yield) which are connected in obvious and non-statistical ways. But the main equations are essentially familiar types, e.g. demand or supply relations. To take an example from U.S.A., 1919–32, we have the relation

$$v_t = 0.66 Z_{t-\frac{1}{2}} - 0.03 q_{t-\frac{1}{2}} - 0.94 m_{t-\frac{1}{2}} + 0.12 \pi_{t-\frac{1}{2}} + 0.63 t$$

representing the demand for durable producers' goods (including non-residential building). The equation relates v, the volume of investment (measured from its average, 1919–32), to certain explanatory variables—Z, the net income of corporations; q, the price of investment goods; m, share yield; π, an index of profit margin —all measured from their respective averages. In addition, a trend term is included as a "catch-all" for those factors which affect the volume of investment slowly and over the long period.

The difficulties involved in deriving an equation of this kind are partly economic, but mainly statistical. We might start by agreeing that the demand for investment goods depends on profits earned, on the price of producers' goods and on the rate, or rates, of interest in some recent period—factors which contribute to profit expectations. Other possible factors should be considered, e.g. profit margins and the rate of increase of the price of investment goods. The statistical problems are concerned with the selection, from all series available, of those most suitable to represent these factors; with the determination of the time-lags to be taken between investment and the various explanatory variables; with decisions on the inclusion or exclusion of explanatory variables according as they are "useful" or "detrimental" to the statistical demand relation; and, finally, with the derivation of the numerical co-efficients of the relation (assumed linear) and of the measures of their significance. In this particular case, after much discussion and experiment, Professor

Tinbergen decided upon a half-year time lag between investment and each explanatory variable, upon the inclusion of share yield but not of a short interest rate, and upon the omission of all speculative elements as represented (e.g.) by the rate of increase of investment goods prices.

There is little need to go into these questions further; they have been extensively discussed by Mr. Keynes and Professor Tinbergen in the pages of the *Economic Journal* (September, 1939, and March, 1940). Professor Tinbergen's account, however, seems to be lacking in two important respects. It is not at all clear why he includes trend terms in some relations and not in others (cf. Vol. II, p. 130). The universal inclusion of trend terms would be equivalent (according to the Frisch–Waugh theorem) to measuring each variable from its long-run trend, and the meaning of the relations would have been so much clearer. Secondly, very little is said on the vital point of the "significance", of the "probable error", to be attached to each co-efficient in the relations. As Professor Tinbergen emphasises, a strong correlation between two explanatory variables usually implies that both variables must not be included in the same relation—the multi-collinear case where the "bunch-map" explodes. But a fair degree of correlation usually exists and does not matter, *except* that the range of error to be attached to the co-efficients must widen as the correlation becomes more marked.

Having obtained a group of equations equal in number to the variables of the system, Professor Tinbergen proceeds to eliminate all variables save one, deriving a final equation in terms of this residual variable. Any variable we care to select can be used for this purpose; for purposes of illustration, we can follow Professor Tinbergen by taking profits, represented by Z, the net income of corporations, as the final variable. It is essential to appreciate fully the significance of the final equation. When no time-lags occur (the "static" problem), the equations relate variables given at the same point of time and can be solved uniquely (in the linear case) to produce the equilibrium values of the variables. But, in our "dynamic" system, variables valued at different points of time are included in the group of relations. Hence, the final equation must contain, not only the current variable Z_t, but also past values Z_{t-1}, Z_{t-2}, . . . Professor Tinbergen's system, in its simplest form, gives a final equation:

$$Z_t = a_1 Z_{t-1} + a_2 Z_{t-2} + a_3 Z_{t-3} + a_4 Z_{t-4}$$

where the constants are derived from the co-efficients of the individual relations between the variables. Before we can describe, from this equation, the course of Z_t over time, we need to know the values of Z_t in four initial years. Note that, if $Z_1 = Z_2 = Z_3 = Z_4 = 0$, then all subsequent $Z_t = 0$, i.e. Z follows its trend and "equilibrium" is maintained throughout. But, if Z_t gets "off its course" in any of the first four years, then the final equation describes a subsequent variation which may be of various damped or explosive, cyclical or non-cyclical types (cf. Vol. II, p. 142). The only interesting case is that of a damped cyclical movement of Z, gradually tending to return to an " equilibrium " level or trend. In Professor Tinbergen's actual system, we do find a strongly damped cycle with a period of nearly five years. The period and degree of damping depend solely on the co-efficients a_1, a_2, a_3 and a_4, which describe the "structure" of the trade cycle. The original disturbance (in the four initial years) affects only the amplitude of the cycle.

A variety of investigations can be carried out, using the final equation as a starting point. We can determine (cf. Vol. II, p. 171) which of the variables, or their co-efficients, in the individual relations most affect the constants in the final equation, and hence which changes (e.g. in consumption habits) would have the most marked effect on the cycle in the period considered. Results of this kind must be accepted cautiously, as applying only to the cycle investigated. A particular factor (e.g. the short-term interest rate) may appear to have little influence, or may be excluded from the system altogether. It does not follow that this factor is never important in the trade cycle ; it may be that the factor just happened to have little influence in the one period studied, *or* that it was almost constant during the period, *or* that its value was closely " pegged " to that of another variable. In the last case, the influence of the second variable, which may be great, includes also that of the first.

Further, the final equation enables us to trace the effect certain policies (e.g. public works programmes or wage-fixation policies) would have had upon the trade cycle, *if* they had been carried out in the period examined and *if* nothing else had changed. It is only necessary to make the appropriate changes in the individual relations of the system and to re-work the elimination to the new final equation. Professor Tinbergen carries out a brief examination on these lines for the inter-war period in the U.S.A. (cf. Vol. II, pp. 168 *et seq.*).

The simplest form of the final equation, considered above, is usually extended by the addition of certain terms involving extraneous variables—variables not included in the system but assumed given, in their courses over time, as data. In this way, we include the effects of certain external forces, e.g. banking policy or the position on the market for residential houses, on the variation of our chosen variable, corporation profits. Roughly, the impact of these forces, which Professor Frisch calls " erratic shocks ", throws the damped cyclical movement off its course, sometimes increasing or decreasing the damping, sometimes starting off a new cyclical movement altogether. In so far as these forces are under control, we are able, once again, to examine the effects of certain economic policies, e.g. banking or housing policy.

The fact that Mr. Keynes has been stimulated to express his views, and to ask certain pertinent questions, is sufficient evidence that this extraordinary and laborious work is also important. These two volumes, to be followed by others, are strong meat for consumption at one sitting, but every economist interested in trade cycle problems—and are there any not in this group ?—should at least obtain a general idea of Professor Tinbergen's method and results.

R. G. D. Allen.

The Variate Difference Method. By G. Tintner. Principia Press, Bloomington (Indiana). 1940. xiii + 175 pp. $2.50.

The statistical methods which are, or can be, adapted to the treatment of economic time series are being rapidly developed on parallel and largely unconnected lines by several schools of mathematical statisticians, notably by R. A. Fisher, by Egon Pearson and J. Neyman and by the Oslo group led by Ragnar Frisch. The particular applications of such methods to time series of economic variables are now the subject of intensive investigation by economists, such as Dr. Tintner, concerned that the fullest use of all available statistical tools should be made in their own field. We may look, in time, for a synthesis of these scattered and specialised treatments into a comprehensive and comprehensible whole. But the gaps are still wide and frequent and their bridging will only be achieved with difficulty, as Dr. Tintner has pointed out so well in a recent paper.[1] Meanwhile, we have the short account under review, covering one sector, and an important sector, of the field.

The basic assumption made by Dr. Tintner is that each value of an economic variable ordered in time is made up of certain " systematic " components combined with an additive residual term. The systematic elements are due to operation of the " regular " economic forces and include the trend, various cycles and the seasonal variation. The random residual appears as a result of the working of many " non-permanent " factors, and it is assumed that one residual is correlated neither with the corresponding systematic element nor with the residual of another term. In the analysis of a time series or in the correlation of one time series with another, we have to separate off the random element and to estimate its " variance ", i.e., its importance in the series as a whole. We have, also, to show up and separate the various systematic components of the series. There are, broadly speaking, two established methods of achieving these ends, the method of fitting orthogonal polynomials according to rather rigid rules and the variate difference method combined, with considerable flexibility, with the use of moving averages in smoothing. Dr. Tintner has made out a powerful case for preferring the second procedure in the analysis of economic material, where flexibility of method is highly important and no considerable degree of precision is obtainable. It is true, as Dr. Tintner is careful to point out, that the variate difference method attains flexibility only with some sacrifice.

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[1] G. Tintner : " The Analysis of Economic Time Series," *Jour. Amer. Stat. Assoc.*, March, 1940.

There is, notably, the difficulty that successive finite differences of a random series display serial correlation. Dr. Tintner maintains however, that these difficulties should not force us to fall back upon the more rigid method of fitting polynomials.

Dr. Tintner has inevitably laid himself open to criticism in his choice of material and in his mode of presentation. In his test of the hypothesis that the variances of successive finite differences are constant, he frames his criterion so that the chance of rejecting the hypothesis (if true) is negligible, say one per cent. He mentions, but never considers, the other kind of error—that we may accept the hypothesis of stability of the variances when it is really false. Again, in his account (in Chapter IX) of the method of smoothing by moving averages, of various lengths and with various weighting systems, he concentrates attention upon the extent to which the variance of the random element is reduced in the process. But what of the effect of smoothing upon the systematic elements in the series, e.g., upon the cyclical or seasonal component ? His final section promises us an estimate of the linear relationship between the systematic parts of two economic variables ordered in time, an important problem which often faces the economic investigator. It can scarcely be said that he fulfils this promise and his contribution takes us only a little way towards the complete solution of the problem.

We must thank Dr. Tintner for presenting a number of tables computed to reduce the mechanical work involved in the use of the variate difference method. The compilation of these tables was part of a W. P. A. project ; would that some method existed in this country for such profitable use of our (peace-time) unemployed resources.

R. G. D. ALLEN.

Monetary Experiments. By RICHARD A. LESTER. Princeton University Press. Oxford : Humphrey Milford. 1939. xx + 316 pp. £1.

The monetary experiments which are the subject of this volume are classified by the author into two types : (*a*) Attempts to overcome depressions ; (*b*) Attempts to stabilise the economy. His book condenses the fruits of much research over a wide field, and economists will be grateful for the collation of so many facts hitherto accessible only to specialists. But, as Professor Kemmerer observes in his cautious Foreword, " Diverse conclusions can of course be drawn from the experiments that Professor Lester has so carefully analysed." Professor Lester himself is less reserved. Claiming that " in many cases they were successful " and implicitly attributing this to Government intervention, he draws the moral that what the world needs is " 100 per cent. Money " and a Commodity Standard. This thesis needs further discussion.

For illustrations of his first kind of policy, Professor Lester turns to the experiments of the American "middle states" in the early eighteenth century. Theoretically, the colonies had the same currency as the mother country, but mercantilism in England restricted the export of gold and silver, and such bullion as did find its way across the Atlantic was speedily sucked back in adjusting the colonies' regular import surpluses. Consequently there was a chronic shortage of cash, which at times caused something like a paralysis of trade. "The Inhabitants of every Degree were reduced to the greatest Straits; Debts could not be discharged, nor Payments be made . . ." (p. 62). Such was the situation in 1723, and to meet it the local legislature created £45,000 in "bills of credit" lent at 5 per cent. to enable debtors to discharge their obligations. Before long this paper formed the sole circulation of the colony, and the relative price-level started to rise; but as prices were falling in the outside world the net effect was one of comparative stability as well as of business recovery. Pennsylvania, in fact, cut loose from the gold standard in 1723 as we did in 1931, and with similarly beneficial results.

But does this prove Professor Lester's point? Undoubtedly business did improve in Pennsylvania after 1723. "It is inconceivable to think what a prodigious good effect immediately ensued. . . . Business all over the Province increased at a great rate" (pp. 72, 73). But the Governor, from whose book the last sentences are quoted, attributes the result at least partly to the concurrent reduction in the legal maximum rate of interest from 8 per cent. to 6 per cent. And in any case was a *Government* issue of paper needed for the purpose? "There were," Professor Lester admits, "no banks at that time". It is therefore not possible to prove that, if such facilities had existed, an equally satisfactory result could not have been secured by the utilisation of bank credit. This suggestion, however, stamps us as a diehard. "Conservative-minded groups," observed Professor Lester, "have continually resisted attempts by the government to substitute cheaper and more economical moneys, but have often favoured such steps when they were performed by bankers for profit" (p. 11).

Let us turn to the author's second category of experiments. Here we have a wider variety on which to draw, ranging from the playing-card money of French Canada (1685–1763), through Massachusetts' Tabular Standard in the 18th century, to Scandinavian policy during and after the last World War. The first of these cases can perhaps be disregarded here, as it is essentially similar to the Pennsylvanian experiments. At the other end of the book comes the detailed (and, it must be said, rather rambling and repetitive) discussion of Swedish monetary management from 1931 to 1939. But this does not appear to yield much more grist to Professor Lester's mill than a presumption that "there is a real possibility to improve economic conditions through a rational monetary policy" (p. 283)—a presumption which remains unproved because " Unfortunately the Swedish authorities have failed to make the best of their opportunities " (p. 282).

We are therefore left with the author's study of the Massachusetts Tabular Standard in its two appearances. The occasion of the second of these was the hyper-inflation of 1780 and the consequent disgruntlement of the Army. As a result, the paper money in which the State discharged its debts was made redeemable in " the then current money of said state, in a greater or less sum, according as five bushels of corn, sixty-eight pounds and four sevenths parts of a pound of beef, ten pounds of sole-leather shall then cost, more or less, than one hundred and thirty pounds current money, at the then current prices of said articles " (p. 158). Professor Lester's argument, developed from this example, embraces President Roosevelt's championship of the stable dollar and Sweden's rather vacillating attempts to stabilise prices. But he goes beyond these to advocate a " Goods Standard ", along the lines discussed and rejected by Jevons in 1875—though Professor Lester's own references do not go further back than 1922. It does not appear that this corollary is admissible. For there is a great deal of difference between a true commodity standard—physical interchangeability between paper and a fixed " basket " of commodities—and attempts to limit fluctuations in the movements of a general price-level. Not only does the former involve converting the Central Bank into a gigantic Department Store, but an acute shortage of any one of the constituent commodities of a composite standard would inevitably cause a disastrous fall in general prices, since no substitute could serve to maintain the supply of money. These objections are not relevant to the more modest proposals to keep prices steady by reference to a " Tabular Standard ", and it is therefore illegitimate to suggest, as Professor Lester seems to do, that a successful instance of the latter is an argument for the former.

Not much weight can thus be given to the author's historical analogies. In any case, the step from these to the " 100 per cent. Money " plan is by no means clear. The essence of this scheme is, of course, to require that all bank deposits shall be backed 100 per cent. by legal tender notes, so that their volume shall be limited by Governmental decisions as to the size of the note-issue. Professor Lester recommends this, as did its original exponents some six or seven years ago, as a specific against credit deflation. But this appears to involve holding a peculiar theory of the Trade Cycle—that it is caused by the " destruction " of money by (*a*) hoarding by the public and/or (*b*) deliberate reduction by the banks of the total of their loans outstanding. The former may be a serious problem in a country like the United States, though it would seem that the Federal Deposit Insurance Corporation is at once an easier and a cheaper remedy. But the second runs counter to nearly all experience. It must mean either that a depression can *only* come after a credit inflation created by the banks against the will of the monetary authority; or that it is the arbitrary decisions of bankers, and not the expectations of entrepreneurs, which determine the level of business activity. For if depression can follow a Government-approved expansion of credit; or if it can be due to entrepreneurs spontaneously drawing in their horns, "100 per cent. Money" can do nothing to prevent it. The sole effect of the scheme would be to embody the banks' unusable lending-powers in legal tender notes instead of in increased reserve ratios. Apart from Governmental deficiteering (which can equally act with "10 per cent. Money") its beneficial results would be completely asymmetrical, preventing booms but sanctioning slumps.

Professor Lester's two recommendations are embodied in a chapter headed "The Challenge to Orthodoxy". But, if we may extend his vigorous metaphor, the orthodoxy at which he tilts is surely already unhorsed and prone. There are indeed few to-day who look for the "automatic" Gold Standard to return to the lists. This fact necessarily lends an air of unreality to the tournament, and we have to examine with additional care the claims of the champions whom Professor Lester would substitute for the vanquished tyrant. He wields a pretty lance on their behalf; but the favours of the Queen of Beauty will not, we believe, be bestowed on them.

Returning with a thud to the common earth, this reviewer cannot refrain from one small grumble. Many recent books—Professor Lester's included—are besprinkled with charts to which frequent reference is made; but the page on which the chart is to be found is not quoted in the reference. The inclusion of this detail would save the reader a time-consuming search.

J. K. Horsefield.

The Medieval Fenland. 200 pp. 12s. 6d. *The Draining of the Fens.* 312 pp. 21s. Both by H. C. Darby. Cambridge University Press. 1940.

How many histories of countries and counties have been written, and how few have been concerned strictly with the countryside! How many such histories have contented themselves with chronicling the lives of the nobility and gentry or with disinterring the legal structure of English economic and social life! Dr. Darby, however, provides us with a narrative that is at once fresh and vital, for he has set out to depict Fenland and its economic activities as they changed so remarkably since early medieval times. He does not claim to have written a "total" economic history. He is very sparing in what he tells us of prehistoric and Roman Fenland. He is too cautious to discuss at length attractive hypotheses, for example the idea of Roman Fenland as a granary not yet submerged, for he knows well that much has yet to be revealed, above all by air photography.

But by bringing together in these two well illustrated if heavily documented volumes the product of long labours and by thus revealing the history of Fenland on the basis of documentary and geographical facts, he has done at least two things. He has given substance to a dream of his editor, Dr. J. H. Clapham—no mean achievement, for Dr. Clapham's dreams are, one infers, no small affairs. What is more, he has put in his debt all those—economic historians, historical geographers and country lovers—to whom Fenland makes its distinctive appeal.

There can be little of importance about Fenland and its changing aspect and ways of life which Dr. Darby has not discovered in the labyrinths where historical sources lie hidden, and integrated with the products of other recent researches to explain how the "humanized" landscape of present-day Fenland has taken shape. In the Anglo-Saxon phase a zone of separation between originally separate kingdoms and in post-Norman times a county palatine in which, because of its inaccessibility, the king's writ did not run, Fenland has become both well settled and rich agriculturally. It is this transformation essentially which Dr. Darby here unfolds with the aid of copious quotations from state papers and from local witnesses (sometimes hostile) throughout the centuries. The main interest in, and explanation of, this transformation are, of course, the persistent and eventually successful efforts to remove the surplus waters, so that the Fen could become "winter as well as summer lands". The many schemes and their vicissitudes are described here with detail and cartographic precision, but it would have been helpful to the non-geographical reader if Dr. Darby had included a much fuller chapter on the physical geography (including river and flood regime) of Fenland. The chief difficulties—the shrinkage of the peat consequent on new drainage cuts and the inadequacy of the outfalls into the Wash—were not easily overcome until steam pumping replaced the wind-mills in the nineteenth century.

In short, Dr. Darby demonstrates here a way in which vital local history may be written. He shows, too, how economic history can be fruitfully wedded to regional geography.

W. G. EAST.

The National Income of British India, 1931–32. By V. K. R. V. RAO. Macmillan & Co. 1940. 233 pp. 10s. 6d.

Dr. Rao has followed up his first Essay on India's National Income, 1925–1929 (published in 1939), by a longer and far more satisfying volume, estimating the income of British India during the year 1931–32. On this occasion he supplies the necessary details explaining fully his sources of information and the bases of his various estimates, which were left to the reader's imagination in his first brief Essay. In addition he has improved in various respects his method of approach, and has the advantage not only of having chosen a census year for his calculation (which provides him with additional and more accurate data), but also of incorporating the results of a number of *ad hoc* enquiries devised and undertaken in the meantime to supplement the information available from official sources. The result is a scholarly summary of the extant data, together with new data on a number of extremely interesting and important points, which have enabled him to make a far more reliable estimate than has hitherto been possible, and also to indicate roughly the probable margin of error.

Dr. Rao's method—after an illuminating preliminary discussion of the "conception of national income"—is, first, to explain his sources of information and method of approach; then to calculate the number of incomes arising from various sources (e.g. agriculture, industry, public administration, transport, the professions, domestic service); next to estimate the total and *per capita* incomes derived from each source; and, finally—after making certain additions and deductions—to sum up the total income of British India. Incomes from agriculture, pasture, mines, forests, fishing and hunting are evaluated by the "inventory" method; incomes from other sources (e.g. industry, trade, the professions, etc.) by the "income" method.

Wherever, in the absence of sufficient official data or direct evidence, it is necessary to make estimates from indirect evidence or sample enquiries, Dr. Rao attempts to obtain information from a number of sources, and it is encouraging to note that in all such cases substantial support is obtained for his own conclusions.

The value and reliability of Dr. Rao's estimates can only be judged by detailed study of his text. His final conclusion is that the net income of British India for 1931–32 amounted to Rs. 16,891 millions or Rs. 62 *per capita*, ± 6%, or—allowing for under-estimates and omissions—to Rs. 17,664 millions or Rs. 65 *per capita*, ± 6%. This may be compared with his previous estimate of Rs. 76 per head for 1925–29. He now concludes that non-agricultural incomes had then been under-estimated, so that this figure should be raised to Rs. 84. But prices had fallen greatly by 1931–32, so that the corrected figure for these years should be about Rs. 60. This leads to the conclusion that, despite the depression, incomes had risen slightly (i.e. from Rs. 60 to either Rs. 62 or Rs. 65 *per capita*) between 1925–29 and 1931–32.

Incidentally Dr. Rao throws light on many interesting and important topics, such as the numbers occupied in various pursuits, the average incomes of different types of wage and salary earners, the distribution of incomes (e.g. between urban and rural earners) and the social implications of many of the facts revealed by his investigations. Dr. Rao must be congratulated on a very valuable piece of pioneer work, which no student of Indian economic and social problems can afford to ignore.

VERA ANSTEY.

Industrial Finance in India. By S. K. Basu. University of Calcutta. 1939. 420 pp. (Price not stated.)

Dr. Basu has undertaken a careful study of the general relationship of banks to industry and of the special institutions established in various parts of the world to supply long-term industrial finance, in order to examine in great detail the problem of industrial finance in India and to discover a solution for this pressing problem.

The result is illuminating, and shows in clear relief the main distinctions between the systems and policies pursued in various countries, drawing much-needed attention to a number of widely prevalent fallacies with regard to the working of these systems—for instance, in Germany and Japan. The chapters on Indian conditions deal fully with the Managing Agent System and with the results of the policy of " State Aid to Industry ", as embodied in the Provincial " State Aid to Industries " Acts. Dr. Basu concludes that, despite its services in the past, the Managing Agent System has now degenerated and can no longer (even if reformed) be relied upon to furnish industrial finance (and leadership). He also throws much new light on the working of the Provincial " State Aid to Industries " Acts, and demonstrates that they have signally failed to achieve their objects in the British Provinces, although considerable success has been attained in a number of Indian States. This failure he attributes to the lack, in British India, of any co-ordinated economic or financial policy or " plan ". He, therefore, concludes that there is urgent need for some new form of organisation, especially for the provision of long-term industrial finance, in which sphere is to be found the most serious gap in India's financial machinery.

Dr. Basu's recommendations for remedying this defect deserve serious attention. He brings forward strong reasons for rejecting the Japanese model (which has been widely advocated as suitable for India) and for adopting some organisation analogous to the industrial mortgage banks established in Europe after the last war. Hitherto controversy on this question has mainly centred on the relative advantages of an " All-India " or " Provincial " basis for such an institution. Dr. Basu's proposals appear to combine the advantages and avoid the chief disadvantages of each method. He recommends the establishment of an All-India Bond-Issuing Institute and a number of credit-granting Provincial bodies affiliated to the Central Institute, but having no power of bond-issue. A Central Institute for bond-issue guaranteed by the Government would enjoy a greater reputation and could more easily raise funds at home and abroad, and would have more opportunity for diversification of risks, than Provincial Institutions. In addition it would be " outside the pressure of local facts and the confusing influence of provincial patriotism ". This is of fundamental and increasing importance in India, where " Provincial Nationalism " has recently tended to become a formidable and disrupting problem. On the other hand, if the actual granting of loans is entrusted to provincial or regional banks (which will obtain these funds for the Central Institute), full advantage can be taken of local knowledge and Provincial and local interests can be safeguarded. As Dr. Basu says, by these means the three essential conditions for a sound mortgage bond system—" marketability, security and yield "—will be secured as by no other scheme. But even if this solution does not prove acceptable, Dr. Basu's book should be widely read for its balanced and impartial analysis of the principles of industrial finance and of the working and results of the various institutions which are examined.

VERA ANSTEY.

India and Imperial Preference. By BALKRISHNA MADAN. Oxford University Press. 1939. xxiv + 229 pp. 10s. 6d.

Dr. Madan has carried out a first-class analysis of the principles, working and results of Imperial preference in India, and has succeeded in placing the problem in its true perspective and even in establishing an objective (though necessarily approximate) measure of the losses and gains involved and of the net balance of advantages of the policy pursued.

His method is first to review the development of Imperial preference in general, and in India in particular; then to trace the trends in the size, composition and distribution of world and Empire trade, and to account for the relative increase in the latter; next to analyse *seriatim* the trends in India's export and import trades, distinguishing between the trends in " preferred " and " non-preferred " commodities respectively, and drawing conclusions as to the net effect of the Ottawa Agreement on Indian export trade and of the " costs " of preference on Indian imports. He then proceeds to discuss " Imperial Industrial Co-operation " and examines the policy and effects of " differential protection " as practised in the Cotton and Steel Industries. Finally he examines the future outlook, making recommendations for modifications in the policy pursued, and adds a postscript on the new Indo-British Trade Agreement, whose provisions he compares with his own suggestions for reform. The whole book is copiously supported with excellently selected illustrative statistical tables.

Dr. Madan has, in fact, succeeded in supplying a real need, i.e., for an impartial and scientific study of this highly controversial question. His conclusions—although neither startling nor even very novel—have, therefore, the great advantage (hitherto lacking) of an accurate and measured basis. His methods of estimating the net effects of Imperial preference on Indian export trade and of the costs of preference are most ingenious, and could well be extended to the Dominions, so that his picture of the results of Imperial preference might be completed, and hence act as a guide to the formulation of Imperial policy in the future.

VERA ANSTEY.

La Politica Annonaria dell'Italia durante la Grande Guerra. By UMBERTO RICCI. Bari: Laterza and Sons. 1939. 363 pp. L. 25.00.

Italian Food Policy during the Great War is a reprint of Professor Ricci's *The Failure of Italian Food Policy*, published in 1921—somewhat shortened and without the first section (on the price rise in general). Although all traces of polemical intention have been removed from the title, Professor Ricci's book remains as lively, anecdotal and critical of state interference, as it was twenty years ago.

The study of the war economics of 1914–20 in our own and other countries is to-day extremely instructive. The problems which confront administrators have altered very little in the interval. The tools for dealing with them are, or should be, a little better for experience. Italy in the great war failed to resolve the dilemma of keeping the prices of foodstuffs within the means of the consumer and yet providing sufficient incentive to activate the producer. Wheat was the outstanding illustration. In the war period productivity (measured on the 1915 acreage), fell 10 per cent., a deficit which had to be made good by an increase of imports of 36 per cent. This was, and will be, a major difficulty in all countries which are normally mainly self-supporting.

Professor Ricci is equally critical of the detailed administration of the various palliatives to high prices—elimination of middlemen by licensed monopolies, rationing, etc.—and of their fundamental principles. He does not deny the necessity for some state interference in war time, but he would reduce it to a minimum. (" The trading State is not a vampire but it is certainly the worst of middlemen.") His own remedies are (i) To put the best industrialists and agriculturalists at the head of the control departments, but to keep the administration within the orbit of the established civil service; (ii) To let the private profit motive continue to function over as wide a field as possible, restoring equilibrium by drastic profits taxes; (iii) To avoid the deterioration in quality which total rationing brings in its train, by limiting it to the qualities of goods bought by the poor, other classes not to have ration cards, and to be forced to buy their goods at free market prices. However doubtful one may be of the practicability or sufficiency of these solutions, even in a country with as simple an income structure as Italy, they deserve careful thought.

Not many books published to-day have the courage to head the last chapter " Economic Freedom : the essential condition for salvation ".

URSULA K. HICKS.

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Eileen Power, 1889-1940

By J. H. Clapham

Any circle is desperately broken by the loss of its most vivid personality; and learned circles—it may perhaps be said without offence—are not often over-endowed with vivid character. Eileen Power was very much more than a bit of a learned circle. All sorts of circles and groups touched at that dancing and radiant point. But this is a journal for students, for the learners and those who should be learned. Some other circles may have suffered less: I do not know. I do know that for these two the loss can hardly be measured.

Economica: no, Eileen Power was not an economist. She was not trained as one. That is unimportant: Ricardo was not nor, I think, Jevons. Much more fundamental—she would have hated to spend her life with attention concentrated on one aspect of human activity, and could never have brought herself to neglect men and women for generalisations about them, bankers for their liquidity preferences or horse-dealers for J. A. Hobson's doctrine of their bargains. And from the other side, as she was the first to allow, even proclaim, she had not that combination of speculative and practical interest and sagacity which makes the ideal economist. Besides, there were aspects of economic life which always remained a little mysterious to her: she was not adept at the nicely calculated less or more. She spent the best years of her mature life in an atmosphere well impregnated with preferences and margins, various sorts of -polies, and all sorts of mathematical refinements in statistics, but retained an amused indifference to the finer and less human issues, combined with respect and affection for those who argue about them and a settled loyalty to the School of which they and she were parts.

She was compact of loyalties, to institutions, to ideas, above all to people. But on the shelves of her splendid library you would find some scores of books of poetry to one "Principles of Economics" or any similar title; and she made no profession of loyalty to the ideas of Marshall or Marx, or any of their annotators. I suspect that her reading of them was a reading in them; and for Marshall I would not guarantee that.

I have known her for twenty-seven years—not as an undergraduate; for during her early days at Girton I was not resident in Cambridge, and she never listened to me from a bench. We first met when she came back as a very young don to direct historical studies at Girton in 1913. She had taken her degree, a remarkably good one of course, in 1910. Next she laid the foundations of her later intimacies with French scholars, and gained an appreciation of how learning may be carried and conveyed by art, in study and research at the Sorbonne. Then she made her first contact with the London School of Economics as Shaw Student from 1911 to 1913. She appreciated London and the free life, and finally mastered the handling of records. So far as I know, she was occupied—professionally—with nothing else at that time but the medieval English nunneries. Her chief advisers were Professor Hamilton Thompson and Dr. Coulton. I say advisers because, although always most generously grateful for help, she cannot properly be called anyone's pupil. She worked her way along lines of her own choosing. In history, it was the social side that held her from the first, and the economic in relation but in subordination to the social. Yet she kept in touch all her life with many sides and epochs of history. And she could, I imagine, have passed easily from teaching History to teaching English.

A year after she came back to Girton war brutally interrupted study. Work on the nunneries was checked, though not laid aside. The men's colleges emptied far faster than in 1939–40, and University life became unnatural and ill-balanced. No doubt a certain distaste for that life as it is pursued here, which Eileen Power always retained, was due in part to its tainted flavour during those four harsh years from 1914 to 1918. But only in part. She resented fiercely—yes, that is the word—the survivals in the older Universities of inequality between the sexes; and she was a little impatient of the single-sex life of a women's college, especially if any of its members defer to, or even acquiesce in, the academic dominance of men. Years later, she could not quite pardon a certain imaginary female Common Room for falling in ranks 'for' Lord Peter Wimsey.

A chance for showing fight came about the middle of those war years. A big general course of lectures on English Economic History had to be provided because the man who had given them was going into government service. Eileen Power was already the obvious deputy. There was an interview with the Secretary of the Historical Board, a bachelor don who saw little of women and had no feminist sympathies. But he had humour and used to tell the story against himself with gusto. "She was charming. We arranged everything in a few minutes. Then she uncovered her batteries—'Mr. ——, I shall not give these lectures unless I have a University lecture room'—What was I to do? She got it." In the Cambridge of 1916 a college lecturer, man or woman, had no *right* to one of the few University lecture rooms; and her status was that of lecturer in a women's college.

Whether she would have left Cambridge if she had not had the chance, and the experience, of an Albert Kahn Travelling Fellowship in 1920–1 I do not know. But I think she would: she was getting restless here. After the Kahn years of wandering among races and civilisations and cities, after the Khyber Pass the Spice Islands and Pekin, with the stirring of a score of half-dormant wants and interests in a receptive many-sided personality, life in even the best of Cambridge colleges might seem a shade parochial. And there was always the dislike of the monstrous regiment of men. So when the chance came in 1921 she moved to London, its social variety, its Record Office and the London School where she was no stranger, to the vast regret of Girton and Cambridge.

Before she sailed she had published her first book, a little one. *The Paycockes of Coggeshall* (1920) has only 66 pages, but it has all the 'notes' of Eileen Power—friendships behind it, human interest in the past, research lightly carried, a special care for wool in history. A year after her return (1922) came the only big book that she completed, a very big book, more than 700 close pages of the *Medieval English Nunneries*, an early volume in Dr. Coulton's series of *Medieval Studies*. I think myself that it is just a little too big. Perhaps it had been too long (nine or ten years) on the stocks; and she had used rather different sorts of timber in the building. Running through it again I even found some few bits of what I should call Ph.D. timber. Could it be Eileen Power who wrote (p. 98)—"It is perhaps unnecessary to postulate that since monastic houses differed greatly in size and wealth, the sources of their income would differ accordingly ?" But it was very much Eileen Power who wrote most of the book, and especially Chapter XI, "The Olde Daunce", nearly forty pages of which I would not sacrifice a line—gay, learned, full of the tears of things, moving without one clumsy step among the pitiful stories of apostate nuns, against whom "the Church could call in the majesty of the State to help, and what was a girl to do ? Can one defy the King as well as the Bishop ? To a soul in hell must there be added a body in prison ?" Maitland could hardly have done it better.

There is 'economy' in the book, but not a great deal. Nuns were poor accountants and what we know of their estates is not particularly interesting. But it was not written with the economic motive. Eileen Power set out to tell all that was worth telling about the English nunneries and their place in society. She did it so well, exploding old fallacies and uncovering fresh truth, that no one need try the theme again for a generation or two.

The books of the next few years were lighter, not volumes for severe scholars, but possibly something better—*Medieval People* (1924), *The Goodman of Paris* (1928). Of a different class, the three volumes of *Tudor Economic Documents* (1924), edited for students with Professor Tawney, did not give her the chance of showing constructive qualities. There is no regular introduction—not that this is a fault—and I do not know how the work of selection, which is of course excellent, was shared between the editors.

By this time Eileen Power was a Reader in Medieval Economic History in the University of London. Of her University work in the twenties and early thirties here is an outside friend's impression, which insiders must amplify or query as they read. Heavy lecturing, day and night, carried on not merely with devotion but with pleasure, and patently successful : much private direction of studies and research, which soon bore fruit : an interest in, and a willingness to undertake, teaching far outside the range that the title of her office suggests (she was very fond of some of her modern teaching) : a generosity in shouldering the work of a colleague sick or on leave which we outsiders used to think was abused by the local authorities; and a warm loyalty to the School, which did not interfere with witty and incisive criticism of some aspects of its government.

Promotion to a professorship came in 1931. All through her London life the circles that she touched were increasing in a way rather bewildering to people of few circles. The passion for travel—travel was her reported recreation when her name first appeared in *Who's Who*—led to an active interest in travel publication and the editorship, with Sir Denison Ross, of the *Broadway Traveller's Series*. In later editions of *Who's Who* after 'travel' came 'and dancing'. The woman professor is not very common, even yet, even in London. The woman professor with 'and dancing' in *Who's Who* was unique. Her library was that of a woman of learning, a woman of letters and a collector of books, all combined. Her rooms were full of beautiful things, mostly Chinese. And—this is important—her dress was appropriate to her rooms, although not mostly Chinese. At some learned gathering not very long ago it seemed to my eye more than usually glittering: "Eileen, you look like Semiramis . . ." "I thought I looked like a Professor of Economic History."

She was in touch with most of literary London and did a great deal of reviewing, mainly for the *New Statesman*. Brilliant reviewing it was. There are notices of hers years old over the imperfect memory of which one still chuckles happily. Then there were music and the drama and the ballet, with the appropriate societies. Hospitality as conducted at 20, Mecklenburgh Square, was as delicate and generous as everything else in the house. Relatives and scholars and all the different sorts of friends, and the children of friends, shared it in perpetual succession. If Eileen was away, the comforts of her house would constantly be free to one or other of these people. And all that the housekeeper of No. 20 did for her mistress—but that was a word not current there—she did as gladly and efficiently for anyone who shared her opinion of 'Miss Eileen'.

The word mistress was not current, mainly because Eileen was by nature a friend of all the world, but partly because of her undogmatic Labour-Socialist principles, rooted in sympathy for the unfortunate and real hatred of public or international injustice. If one insinuated that the library and the travel, the frocks that indicated a Professor of Economic History, the space and furnishings of No. 20, even those endless generosities mostly so intimate that they cannot be written down, might not all be permitted to single women, however eminent, in the classless society when it comes, she took it all with her gay smile, went on as before, and paid twenty guineas for the next professorial outfit. She was not a stickler for petty consistency.

To get back to work. If one cannot put it in so many words that she founded the Economic History Society in 1926 and so made possible the first number of the *Economic History Review* in January, 1927, it is certain that she was Secretary of the Society from the beginning and always a prime source of its vitality. Before the *Review* was founded, her travels, her old associations with Paris, the opportunities which London gives for meeting visitors to Museum Street and Chancery Lane—and always the charm of her society—had given her a wide range of scholar friends, American, Italian, Dutch, Chinese, Russian, German, but above all French and Belgian. Elie Halévy and Marc Bloch, Pirenne and Ganshof are the first names that come to mind ; but there were very many others. In her own field I think Marc Bloch was the man she most admired, for his books and his inspiring editorship of the *Annales d'histoire économique et sociale*, a journal whose full name describes exactly the sort of history she cared for most. The straiter sect of economic historians may be reminded that, just as Eileen Power began large-scale work with *Medieval Nunneries* so Marc Bloch began with *Les rois thaumaturges*, a full study of the faith that in England led to 'touching for the Kings Evil'. The *Review*, of which she was never an editor but always a member of the editorial committee, gave every opportunity for utilising and widening all these international connections. In the end there were few English historians better known outside England.

A recognition of this came a few years ago when, to her undisguised delight, she was made a Corresponding Member of the very 'select' Medieval Academy of America.

From the time of the *Paycockes of Coggeshall* and after the *Nunneries* were published the leisure time for research that she always managed to make was filling up with medieval wool. The first printed result, so far as I can recall, was "The English Wool Trade in the Reign of Edward IV." in the *Cambridge Historical Journal* for 1926. She reminded us that, famous as the medieval wool trade was, "its history was still largely unwritten" Her habit was to work back and forward between the trade and the flocks that supplied it, her main interests seeming to lie sometimes in the English countryside and sometimes among the merchants. She wandered into other countrysides in order to prepare and eventually to publish in 1932, in Vol. VII. of the *Cambridge Medieval History*, an admirable and, what is rarer in joint-stock history, a most readable chapter on "Peasant Life and Rural Conditions".

Meanwhile there had begun a scholarly partnership which was to become closer in time. In 1932 appeared the *Studies in the History of English Trade in the Fifteenth Century*, edited by Eileen Power and M. M. Postan. It was the result of several years' work in a seminar, and only those who were members and contributors can say just how much of the inspiration and guidance for the various sections was hers. I should guess most of both. Her own contribution was a 50-page article on the Wool Trade which developed the themes touched on in the much shorter article of 1926 and went a very long way towards removing the reproach that the trade's history was "largely unwritten". This wool trade work was very valuable and strictly original; but I hope I shall not be accused of indifference to wool—I have handled it as best I could in my time—if I say that for my private reading I prefer Eileen Power on "The Olde Daunce" to Eileen Power on "shorlings and morlings" and "locchi", or even on deferred payments and credit. She was acquainted with problems of deferred payment but had no natural relish for them. The Pastons and Celys and their like help to keep her wool narrative alive, and as they used to say in the trade 'lofty'; but there is not so much room in it for her own personality, a thing vastly more important than her learning, as there was in the story of the fallen nuns.

All the time her many activities were never interrupted. They only multiplied. She was seen more in Cambridge when she accepted a place on the governing body of Girton. The last queer remnant of inequality between the sexes which a reformed Cambridge retains she treated with amused ridicule, and I dare say a bit of contempt. But she knew and admitted generously—how that word generous recurs: there is reason—that women there had got nearly all. She saw them on Faculty Boards; holding University Lectureships and eligible for Professorships; examining in the Triposes. She came to her first History Tripos dinner—hitherto a very male orgy—in the Combination Room at King's as my guest, and to accompany the first woman examiner, who was also her closest Cambridge friend. She dressed for the triumph; enjoyed it immensely; and raised the level of talk and wit in that Combination Room.

Some years later, when the new chair of Economic History in Cambridge was to fall vacant, she knew very well that, if she cared to stand, hers would be a very strong candidature. There is an elder statesman of conservative leanings at Cambridge who let me know, with statesmanlike caution, that as chairs were now open to women, why, that was the sort of woman we wanted.

I did my best to persuade her to stand, but in the end she decided not to let her name go forward. Cambridge appointed her working partner as she had wished. Meanwhile Oxford had paid her a compliment almost as high as Cambridge could have done if it had seen fit to offer her a chair. She was invited to give the Ford Lectures for 1938–9. Into them she put the cream of her years of work on medieval wool and wool people. The lectures, like all her lectures, her talks and her after-dinner speeches, were an immense success. I did not hear them and I have not seen the MS. which, everyone will be glad to know, is nearly ready for publication. It is hoped that when the storms are over ways may be found for publishing with the lectures some at least of the masses of close research on which they were based.

Of one activity of these later years I am able to speak with rather special knowledge. Long ago she began to tell me that the *Cambridge Modern History* was deficient on the economic side and the *Cambridge Medieval History* not nearly so full on that side as it should be—though she had written for the *Medieval* and I had written for both. This needed no telling. Had not Keynes spoken somewhere of a plunge into the rather dense waters of the *Modern* and a failure to bring up one single reference to the price revolution of the sixteenth century? What was to be done? A new edition economically adequate or a new book? We decided for the new book—a *Cambridge*

Economic History parallel to the two others, but on a smaller scale. The Syndics of the University Press agreed at once and appointed the two projectors its editors. Eileen Power was to have prime responsibility for the medieval volumes—the plan was for three of these—and her colleague for the modern, another three or four. We were to leave the Ancient World because the *Cambridge Ancient History* was still unfinished, and was giving more attention to economic things than its predecessors had.

We got to work in 1934. The plan for the medieval volumes was hers, but elaborated in co-operation with the colleague at the London School, already very near to her and to become much nearer after he had left it. Rigid chronological treatment was to be avoided and contributors were to be few, each to take a big theme and treat it comparatively. When we got to work we were a little disappointed to find that the number of scholars with the nerve for such treatment was less than we had hoped. The central section of our first volume and some sections of our second had to be more subdivided than we had wished because the man who knew all about Lilliput might profess his inability to compare it with Laputa or Brobdingnag. Eileen Power had incisive ways of referring to such people. This first volume was to be, is to be, agrarian. My colleague had just finished some editorial work on its last chapter when she was taken; but, war or peace, the volume shall be out early next year. As the contributors come from ten different countries, it will be understood that there were editorial difficulties even before September, 1939.

For the other medieval—the Power—volumes, equally international in design, her colleague has the full scheme, the contributors, and a few of the chapters; but not her chapter in Vol. II, nor any immediate prospect of getting many others. Yet, thanks to her conception, the agrarian volume is a whole and can stand alone, as it must, until the nations can co-operate again.

The last two and a half years of her life were a time of great private happiness and growing public misery. What man has made of man nearly broke her indomitable heart before it was broken by act of God. But I will think of her in the garden of the house that they had just built not very far from mine, gay through all her distress, enjoying with the zest of a girl what was to her a new outdoor activity and surrounded by her springing flowers.

The Terms of Trade

By Frederic Benham

I

THE concept of the terms of trade is important in modern trade theory. The theory of comparative costs shows under what conditions (namely, different opportunity-cost ratios) trade between two countries will be profitable to both. Suppose only two countries, only two commodities, and constant opportunity-costs, and neglect costs of transport. For every unit of commodity *A* that the first country produces it could produce instead one unit of commodity *B*. For every unit of commodity *A* that the second country produces it could produce instead two units of commodity *B*. It will pay the first country to import commodity *B*, obtaining it indirectly by exchange instead of directly by producing it, provided that it has to give anything less than one unit of commodity *A* in return for each unit of commodity *B* which it imports. It will pay the second country to import commodity *A* provided that it has to give anything less than two units of commodity *B* in return for each unit imported. Thus the two opportunity-cost ratios (namely, 1 *A* to 1 *B* and 1 *A* to 2 *B*) are the two limits to the range of terms of trade profitable to both countries. But what will determine where exactly, within these limits, the actual terms of trade will lie ? The answer to this question forms a separate chapter in the theory of international trade, a chapter which supplements or completes the theory of comparative costs. The exact position of the terms of trade is shown to depend upon relative elasticities of demand—upon the elasticity of demand of the first country for commodity *B* (which must be the same thing as the elasticity of supply of commodity *A* from the first country to the second, since it is with commodity *A* that the first country pays for its imports of *B*) and upon the elasticity of demand of the second country for commodity *A*. This is usually illustrated by one or more diagrams of the type used by Marshall in this connection.

Some writers then proceed to point out that the position of the terms of trade measures the division of "the gain from trade" between the two countries. They would say that if, in our illustration, the terms of trade lay close to the 1 : 1 ratio, most of the gain would go to the second country, and that if they lay close to the 1 : 2 ratio most of the gain would go to the first country.

Moreover, the concept plays an important part in discussions by economists of trade policy. One of the most "respectable" arguments for Protection is that it may turn the terms of trade in favour of the country imposing export or import duties. Again, a country which has to make payments to another not for current imports but for rents due to absentee landlords, or reparations, or interest on past loans, and so forth, is thought by some to suffer a "transfer burden". It has to raise the money to be sent abroad, thereby depriving itself of goods to that value which it might otherwise have consumed. But in addition, some writers argue, the fact that it has to make this transfer, creating an export surplus to that value, must turn the terms of trade against it, bringing down the prices of the goods it exports relatively to the prices of the goods it imports. It is this adverse change in the terms of trade which constitutes the transfer burden. Some writers, however, deny that such a change need necessarily take place, and some urge that if a change in the terms of trade does take place owing to the transfer it may be a change favourable to the paying country.[1] Again, to give a more recent illustration, some writers contend that German trade policy in South-East Europe during the years just before the present war resulted in the countries of that area being forced to accept unfavourable terms of trade from Germany.

This article is largely, although not entirely, a series of grumbles against the stress often laid on this concept of the terms of trade. I believe that the simplifying first approximation of two countries and two commodities has done a good deal of damage. It has induced the belief that the terms of trade is a more clear-cut concept, capable of more exact measurement, than in fact it is. It has suggested, with the aid of the "Marshall" diagram, that a government has much more scope for improving its country's terms of trade than, in reality, it usually possesses. Moreover, the fact that more favourable terms of trade are not an end in themselves, that indeed such a change may be one element in an economic situation which as a whole is unfavourable for the country in question, is sometimes overlooked. It would be well for writers on trade theory and trade policy always to bear in mind that the terms of trade refer merely to the relation between two sets of world prices—the prices of the things which a country sells and the prices of the things which it buys.

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[1] Most readers will remember the controversy which took place, in the *Economic Journal* and elsewhere, on this subject with reference to German reparations after the last war.

II

The measurement of the terms of trade would present no difficulty if a country exported only one homogeneous commodity, say coal, and imported only one homogeneous commodity, say wine. Its terms of trade would be the amount of wine which it got in exchange for a unit quantity of coal. If it now gets more gallons of wine for a ton of coal than at some previous date, its terms of trade can be said to have improved as compared with what they were at that date, and the improvement can be measured exactly. Nevertheless it must be observed that tastes may have changed during the interval, so that wine, for example, may be more (or less) highly esteemed by consumers, relatively to other goods, than it was in the past.

In fact, most countries import and export a large number of commodities—to say nothing, for the moment, of sales of services and other international transactions. Hence a change in the terms of trade must be measured with the help of index-numbers of export prices and of import prices.[1] We are at once confronted with the "index-number problem", to which no satisfactory solution is possible.

Apart from changes in taste, with which no statistics of prices and no index-numbers can cope, two difficulties are likely to arise.

In the first place, as time goes on changes are likely to occur in the kinds of goods traded. Old commodities will disappear and new ones will emerge. Under this heading come any substantial changes in quality. This makes a direct comparison between two periods impossible unless only the commodities common to both are included. But this may rob the comparison of all value. For example, it must be misleading to compare a country's terms of trade to-day with what they were in 1900, for in the interval many important new types of commodities—rubber, petrol, motor-cars, electrical appliances, films, artificial silk, and so forth—have come to play a prominent part in international trade.

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[1] The price of a representative collection of exports over some period—for example a year—chosen as the base-period is represented by the index-number 100. The price of the same representative collection is then found for other periods. Suppose that the base-period is a year and that in some future year this same collection sells for twenty per cent. more. Then the index-number of export prices for that year is 120. If over the period import prices, measured in the same way, are unchanged, the terms of trade may be said to have improved by twenty per cent.; if import prices have fallen by ten per cent., the terms of trade may be said to have improved by a third (120/90); if import prices have risen by fifty per cent., the terms of trade may be said to have worsened by one quarter (120/150); and so on.

In the second place, as time goes on changes may take place in the shares of different goods in total exports or imports. This may happen in the short run owing merely to weather conditions. For example, Australia may have a good wool clip and a poor wheat crop, or conversely. It may happen in the longer run because a country adjusts itself to changes in world conditions. Chile exports less nitrate; Brazil exports more cotton; cotton goods, which at one time formed half British exports, now form less than one-sixth. A country may discover and export mineral deposits. It may change its whole economic structure. Thus before the last war the United States exported mainly agricultural products; during recent times it has exported mainly manufactured products. Such changes in proportions probably mean that calculations purporting to measure how the terms of trade have changed will yield results which vary according to the method of weighting adopted. It may be that one method will show them to have improved while another will show them to have worsened.[1]

All this does not mean that attempts to measure changes in the terms of trade are completely useless. But the results should be treated with caution and examined in the light of a knowledge of all the relevant facts; and only broad qualitative conclusions should be drawn. Comparisons over long periods should be treated with particular suspicion. The British Board of Trade is wise in changing the base for its export and import price index-numbers every few years.

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[1] A simplified example will illustrate the difficulty caused by a change in proportions. Suppose that in 1900 a country exported 5 million tons of coal at £1 a ton and 1 million tons of steel at £3 a ton and that now it exports 4 million tons of coal at 10s. a ton and 2 million tons of steel at £4 10s. a ton. Let us suppose that the country exports nothing else, and that the price-level of its imports is the same in both years. The price of coal is 50 per cent. lower than in 1900 and the price of steel is 50 per cent. higher. What has happened to its terms of trade? We might take 1900 "weights". In 1900, 5 million tons of coal + 1 million tons of steel sold for £8 million; to-day they would sell for £2.5 + £4.5 = £7 million. On this basis, the terms of trade have worsened by one-eighth. Or we might take present "weights": 4 million tons of coal and 2 million tons of steel now sell for £11 million; in 1900 they would have sold for only £4 + £6 = £10 million. On this basis, the terms of trade have improved by one-tenth.

A word may be added about Marshall's suggestion[1] that "it seems better to suppose either country to make up her exports into representative 'bales'; that is, bales each of which represents uniform aggregate investments of her labour (of various qualities) and of her capital." This gives us the factorial terms of trade, which is a different concept from the one we have been discussing. We shall mention it later. Our present point is that it does not really evade the index-number problem. It merely shifts the difficulty back to the weighting which must be given to the various factors, for as time goes on there may be large changes in the proportions of the various factors used in a country's export industries.

III

Let us now set aside difficulties of measurement. We may suppose that over a period there have been no significant changes in tastes or in the kinds or proportions of goods traded, so that the change in the terms of trade over the period can be measured fairly accurately. Can we say that a country must have gained by a "favourable" change or lost by an "unfavourable" one?

If a country now enjoys more favourable terms as the result of an increased foreign demand for her export goods, this will probably mean an improvement in her general economic position. But there are exceptions even to this. For example, an increase in the world demand for wheat may send up its price, but a particular wheat-exporting country may be worse off, on balance, owing to a succession of bad harvests. It is true that she would be in a still worse position had the price of wheat not risen, but the fact remains that the terms of trade, without any further data, are no index of the change which has taken place in her general economic position.

In the absence of any such offsetting factors, a country will gain by an increased demand for her exports. But the importance of this gain may depend on how large a proportion of her output is exported. Clearly a country like New Zealand, which exports a large proportion of her output, will experience a bigger change in her consumable income than a country like Russia, which exports only a small proportion.

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[1] Marshall, *Money Credit and Commerce*, p. 157.

Further, a rise in her export prices may lead to an expansion of her export industries.[1] The extent of the gain *on the additional exports* will depend on the opportunity-cost situation. For example, if labour and other factors find it worth while, but only just worth while, to move into the export industries, *this* gain will be small. The ideal situation, from a purely nationalist standpoint, would be for a larger volume of exports to sell at higher prices per unit and to be produced, owing to economies of scale, at lower costs per unit. But this, of course, would imply monopoly in the export industries. If export industries do yield increasing returns, there is clearly a case for the State to take action, making itself the sole seller or levying appropriate export duties when confronted with an increased foreign demand.

Suppose now that a country enjoys more favourable terms of trade because of a fall in the world demand for the kinds of goods which it imports. Great Britain, in common with other manufacturing countries, was in this situation during the great depression, owing to the great fall in the prices of most foodstuffs and raw materials. The countries exporting such products clearly lose. But do the countries importing them gain?

They, too, may lose on balance. They may get on balance the same volume of imports as they got before, giving in return a smaller volume of exports. But if factors in the export industries are specific, and cannot be diverted to other uses, the result may be heavy unemployment of labour, and idle capacity, in the export industries. On top of this, the fall in import prices may begin a " deflationary spiral ", spreading the depression to the importing countries. Some writers have urged that this happened to Great Britain. I myself believe that she weathered the depression largely with the help of cheap imported food. But that is a question of historical fact. The gloomy possibilities which we have set out might come to pass in some instances, although I myself think this unlikely. In any event, it seems clear that the gain from more favourable terms of trade in such cases will often be less than appears, owing to increased unemployment in the country's export industries and other difficulties of adjustment.

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[1] It may be noted that such an expansion is likely to benefit mainly factors employed in a higher proportion in the export industries than in other industries. For example, if the export industries are agricultural, most land rents are likely to rise. For if there is mobility of factors, all units of a given type of factor will earn the same whether they are employed in the export industries or elsewhere.

If a country succeeds in turning the terms of trade in its favour by imposing restrictions on its imports, the resulting gain may be more than offset by a reduced total volume of trade, implying that less advantage is being taken of international division of labour. During the great depression, most countries in western Europe placed great restrictions on the entry of foodstuffs from overseas. This drove down still further the prices of such foodstuffs, but most of the benefit went to countries like Great Britain, who continued to admit them, rather than to restricting countries like France, Germany and Italy, who admitted very little.

Suppose now that the country's terms of trade improve because her chief exports become more difficult to produce. Suppose, for example, that British coal becomes more difficult to win and that in consequence the world price of coal rises by some 10 per cent., other prices remaining the same. Is this on balance a gain to Great Britain ? A ton of coal now buys 10 per cent. more imports than before, but if it takes 20 per cent. more labour and other factors to produce a ton of coal, Great Britain is, surely, worse off by the change.

In the same way, an unfavourable change in the terms of trade may clearly represent a gain to the country if it is due to greater efficiency in her export industries, given factors producing considerably more goods and selling them at slightly lower prices.

The long and short of this discussion is that the terms of trade, taken alone, tell us practically nothing. In order to appraise what has happened, we need to know a number of facts, such as changes in demand, in productive efficiency, and in the total volume of trade. If we know all the relevant facts, the concept of the terms of trade becomes almost unnecessary.

Rival concepts, taken by themselves, have little, if any, more significance. Take the factorial terms of trade, the concept used by Marshall. Would Great Britain really be worse off if a day's British labour commanded the produce of less German labour than before? As Marshall himself points out, Great Britain would be better off if German efficiency had increased so much that a day's British labour commanded a bigger volume of German goods.

The fact is that nobody really cares much what happens to the factorial terms of trade. When some economists hint that this is the really important concept, what they probably mean is that we should consider a kind of cross-classification, namely, the volume of imports obtained in exchange for a " unit " of factors employed in the export industries. It is true that this often has significance, but again it is probably better to consider all the relevant facts rather than to invent a new term for this concept and to try to measure it.

Professor Taussig speaks[1] of the " gross barter terms of trade ". This relates to the ratio between the total volume of goods exported and the total volume of goods imported. The " gross barter terms " show much bigger swings than the " net barter terms "—that is, than the terms of trade proper. They become less favourable when a country is exporting more capital, for then its exports increase relatively to its imports. They became much more favourable to Great Britain in 1926, owing to the coal strike and the consequent reduction in her total exports. It can doubtless be argued that when a country is at war, it is important for it to get as much help as possible from outside. For example, Great Britain during recent months has benefited in that some of her dominions and colonies have allowed their balances to accumulate in London, thus in effect providing her with imports for which they get no immediate return. But this and similar points can be best discussed without dragging in the concept of the gross barter terms of trade.

IV

To what extent can a country turn the terms of trade in her favour, by restricting either her imports or her exports?

The two-country diagram usually employed in discussions of this problem suggests that the extent may be quite large.

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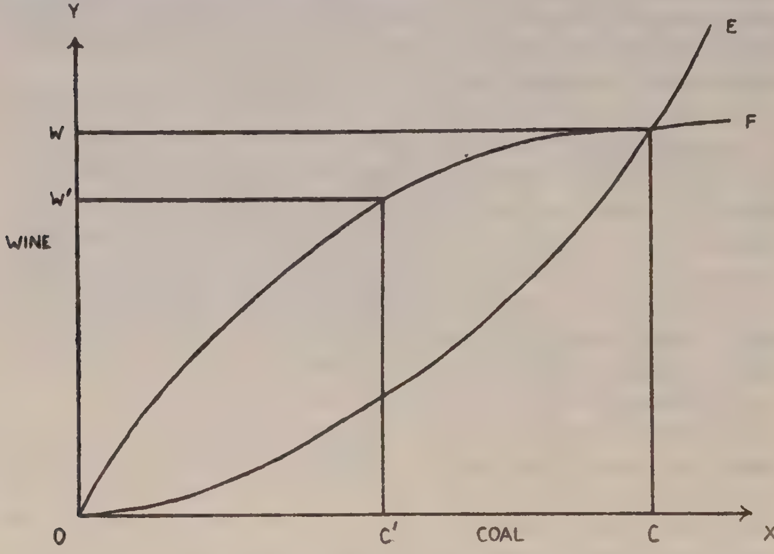
[1] *International Trade*, p. 251.

Thus, in the diagram below, England exports coal in exchange for wine from France.



OF is the aggregate French demand curve for English coal. It shows the total receipts of wine, measured up *OY*, which would accrue to England in return for varying quantities of coal, measured along *OX*. *OE* is the corresponding English demand curve for wine. Under free competition, without any State intervention, *OC* coal exchanges against *OW* wine.

But France would be willing to give *OW′* wine—over 80 per cent. of the present quantity—in return for *OC′* coal—about half the present quantity. England would probably gain if her Government took action to bring this about—either taxing coal exports until only *OC′* was exported or taxing wine imports until only *OW′* was imported, or itself monopolising the trade. She would probably gain because the English factors of production now employed in producing *C′C* coal could probably produce something else which English consumers valued more highly, perhaps much more highly, than the *W′W* wine forgone.

The reason why the terms of trade can be turned so much $\left(\text{from } \frac{OW}{OC} \text{ to } \frac{OW'}{OC'}\right)$ in favour of England is that the French demand is relatively inelastic. The curve *OF* is flattening out. If it became horizontal, the French elasticity of demand, over the horizontal stretch of the curve, would be equal to unity: greater quantities of English coal exported would yield only the same total quantity of wine in exchange. If *OF* turned downward—becoming, in Marshall's phrase, an "exceptional" demand curve—before it cut the English curve, then England could obtain more wine by restricting her export of coal: the gain from State action, to turn the terms of trade in her favour, would be quite obvious.

In fact, the foreign demand for any particular country's exports is usually very elastic. For as a rule the proportion of any given good supplied to the world market by one country is fairly small. If that country raised its prices appreciably, buyers would turn to other countries, who between them could usually fill the gap at prices only slightly above those previously ruling. Even if one country does supply a large proportion of one commodity, some other countries are usually ready to produce and export more of it if its price rises. This was discovered, to give some examples, by Brazil when it tried to keep up the price of coffee and found that the proportion of coffee supplied by other countries went up from about 20 per cent. to nearly half; by the United States, which kept up the price of cotton and thereby greatly stimulated production in Brazil and elsewhere; and by the restricting countries under the sugar scheme. In theoretical language, elasticity of demand varies with the availability of substitutes; similar goods from other countries are close substitutes for a given good supplied by one country; hence the world demand for that type of good may be inelastic but the world demand for it *from a particular country* is usually very elastic.

In general, a country can force up the prices of its exports only if it combines with other countries exporting similar goods, and the group between them provide most of the actual and potential supply. An example is the group of rubber-producing countries combined in the last Rubber Restriction Scheme—the Stevenson Scheme failed because it did not include the Dutch East Indies.

Similar reasoning applies to the question of whether a country can "squeeze" its suppliers, compelling them to sell at lower prices by imposing, or threatening to impose, tariffs or other restrictions on their goods. It cannot usually do much unless it buys a considerable proportion of the total exports of such goods. More accurately, it is limited by the possibility that its suppliers can make up for reduced sales to it by selling more, at slightly lower prices than before, to their other customers. In the longer run, it is further limited by the possibility that some factors of production in the export industries of its suppliers may find it worth while, in view of the reduced demand for their present products, to move into other fields of employment. One result of agrarian protection in Europe during the great depression was to stimulate manufacturing, for their home markets, in overseas countries; and one result of the British tariff on steel "semis" from the Continent was that the Continent went in more for more-finished steel products, which competed in overseas markets with similar products from Great Britain.

Again, action to "squeeze" suppliers is usually most effective if taken by a group of countries who between them buy a large proportion of the total. Thus the heavy restrictions on imports of foodstuffs imposed by Germany, France, Italy, and other countries during the great depression undoubtedly kept down the world prices of foodstuffs, but most of the benefit went to Great Britain, which continued to admit foodstuffs and thereby to take advantage of their low prices.

Finally, it must always be remembered that other countries may retaliate in kind to tariffs and similar restrictions. Action which would benefit a country if other countries did nothing in reply might in fact harm it by starting a tariff war.

It is perhaps worth pointing out that the British tariff seems to have done little to turn the terms of trade in favour of Great Britain. The big swing in her favour occurred, owing to the depression, before she imposed tariffs. Her own policy, rightly or wrongly, was to keep up the prices of "primary" commodities. Thus, for example, nearly all the price-difference between bacon in Denmark and bacon in Great Britain went to the Danes, who were given the export licences. Less bacon came in, but it came in at relatively high prices. Similarly with other imports, such as meat and steel. Further, the British tariff, plus Ottawa, undoubtedly stimulated protectionism in other countries.

What of the "transfer burden"? It has been argued that a country might be unable to make a given transfer, although the amount to be transferred (at previous prices and exchange-rates) could readily be raised by taxation. Germany may have a given annual sum to pay in sterling; she may export only linen; the foreign demand for her linen may be inelastic so that no amount of linen would yield the required sum in sterling.

In the real world, such a situation is unlikely in the extreme. The demand for a given commodity *from any one country* will probably be very elastic; if not, there will be other commodities or services, with fairly elastic demands, which the paying country does or could export, and whose export it could increase; and the paying country can cut down its imports.

The terms of trade may move against the paying country. On the one hand, the transfer of a given sum per unit of time will raise the incomes of the receiving countries and lower the income of the paying country. The resulting redistribution of income may lead to a change in total demand either in favour of the paying country's export goods (relatively to the receiving countries' export goods) or in the opposite direction. On the other hand, reduced incomes in the paying country are likely to make the production of its home goods (which do not enter into international trade) less profitable than the production of "international trade" goods, and increased incomes in the receiving countries are likely to do the opposite. Hence there will probably be a movement of factors into the export industries of the paying country and away from the export industries of the receiving countries; these movements will help to create the required "export surplus" in the paying country and "import surplus" in the receiving countries; they will also tend to lower the relative prices of the export goods of the paying country. On balance, therefore, the terms of trade will probably (although not necessarily) turn against the paying country, but—as our previous remarks in this section have shown—not by much.

V

I now turn to some of the relations between the terms of trade and the money rate of exchange, on the assumption that the latter is left quite free to vary.

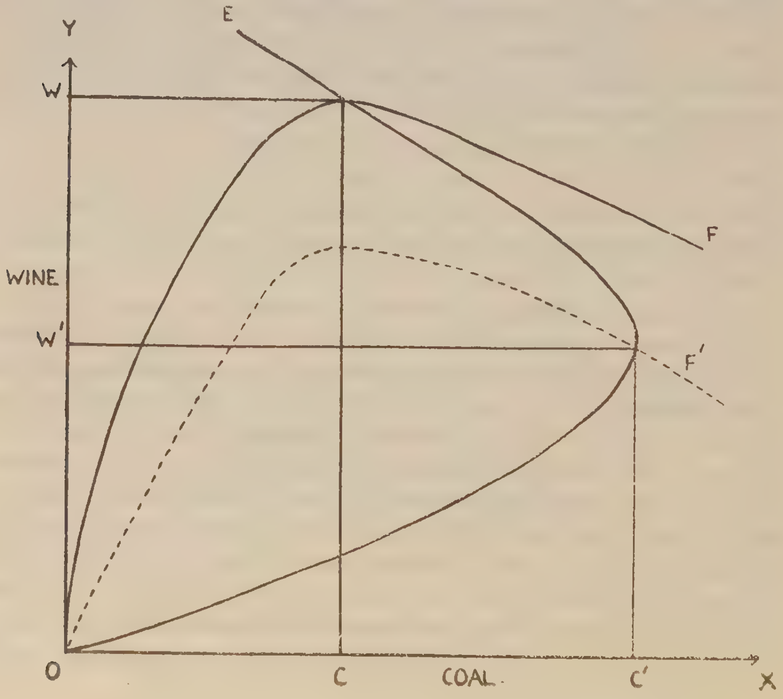
As I have shown more fully elsewhere,[1] under certain conditions a change in the terms of trade, due to changes in demand, will be exactly reflected in the exchange-rate. For if France (representing the rest of the world) wants sterling only to buy coal and England wants francs only to buy wine, the demand for sterling is merely the counterpart of the demand for coal. Thus if a country's export prices are halved owing to a large fall in the foreign demand for its goods, and its import prices remain about the same, the exchange-value of its currency will also tend to halve. Something of this kind happened to a number of countries

[1] *Economics* (Pitman), pp. 442–4.

—for example, Japan and Australia—during the great depression. This clearly makes nonsense of any claim that changes in the rate of exchange reflect a corresponding change in the relative purchasing power of the two currencies over *goods in general.* The " general price-level " in each country can remain almost unchanged while the rate of exchange halves.

It has sometimes been feared that an equilibrium cannot be reached if there is a fall in the foreign demand for a country's goods and demand, on both sides, is inelastic. In fact, as we have argued, inelastic demands for one country's exports are most unlikely. But in any event this fear is unwarranted. Let us again suppose that England exports, and can export, only coal and France only wine. The French demand for coal falls. The value of the pound sterling, in terms of francs, falls. This encourages the export of coal and checks the import of wine. But French consumers give a diminishing total of francs for increasing quantities of coal and English consumers give an increasing quantity of sterling for diminishing amounts of wine. Is an equilibrium possible ?

Certainly it is, for any given number of pounds can exchange against any given number of francs, per unit of time. What the new equilibrium will be, in real terms, can be shown on a " Marshall " diagram.



The French demand falls from *OF* to *OF′* and instead of getting *OW* wine for *OC* coal, England has to give *OC′* coal to get *OW′* wine. Suppose that in the old equilibrium 10 tons of coal, per unit of time, exchanged against 20 gallons of wine, and £1 equalled 100 francs, whereas now 20 tons of coal exchange against 10 gallons of wine. Suppose that there are no disturbing factors (such as inflation or deflation, changes in marginal costs due to changes in amounts produced, technical progress, or speculation) so that the marginal cost of production of coal remains at £1 per ton and of wine at 50 francs per gallon. Then £1 will equal 25 francs, in the new equilibrium. The change in the rate of exchange will be merely the counterpart of the change in the terms of trade. Obviously, however, such a situation cries out for intervention by the British Government to secure better terms of trade.

I turn to a different question. Suppose that a Government deliberately reduces the exchange-value of its currency below equilibrium level. This is perfectly possible (although it gives a severe shock to the crude purchasing-power parity theory) provided that the Government is prepared to acquire foreign currency or gold: the leading example, of course, is the United States since the dollar was devalued. If the Government refrains from inflation (itself acquiring and "sterilizing" the extra foreign currency or gold) the result must be to turn the terms of trade against the country. The reduced rate of exchange acts, in this respect, in the opposite way to a general tariff. It induces the exporters of the country to underbid one another in foreign markets, because they now get larger amounts of their own currency per unit of goods, and they have suffered no corresponding rise in their costs.

I do not think that any modern Government would be deterred from this practice by the knowledge that it was virtually making a present to the "foreigner". It would probably be anxious to diminish unemployment and to change the distribution of the national income in order to help its export industries. Even if it could be persuaded that these ends could be achieved more effectively by more direct methods, it would probably continue to believe that to promote exports is a main object of policy. Probably the best way to dissuade it would be to convince it that other countries would follow suit, and that a régime of competitive exchange depreciation would be bad for trade.

Finally, I turn to the belief that a country practising exchange control gets better terms of trade if it gets a high exchange-value placed on its own currency. For example, in 1938 Germany tried to get Rumania to value the mark at 50 or 60 lei, instead of 40. Would this have given her better terms of trade?

If Rumania had been content to keep the leu undervalued in terms of the mark, and to acquire and hold increasing mark balances, Germany would have had better terms of trade. But Rumania—and this applies to all countries in South-East Europe—was not prepared to do this. If her producers obtained more lei, by selling goods to Germany, this would have led to an increase in the quantity of money in Rumania until (on " purchasing-power parity " lines) the rate of exchange fixed by Germany became an equilibrium rate.

The terms of trade obtained by Rumania from Germany are best seen by valuing both her sales to Germany and her purchases from Germany in terms of lei. If Germany paid higher prices, in lei, than other countries for her produce and sold goods to her at prices, in lei, which were competitive with those charged by other countries, then Germany gave Rumania better terms of trade than other countries did. The object of Germany in trying to fix high values for the mark in South-East Europe was not to improve her terms of trade (for if she had to give fewer marks for her purchases she obtained correspondingly fewer marks for her sales), but rather to divert the trade of those countries towards Germany. For most of these countries had fixed rates of exchange with England and other " free-exchange countries " which they were reluctant to alter drastically. If Germany forced up their money incomes and costs they would find it increasingly difficult to trade with countries other than Germany.

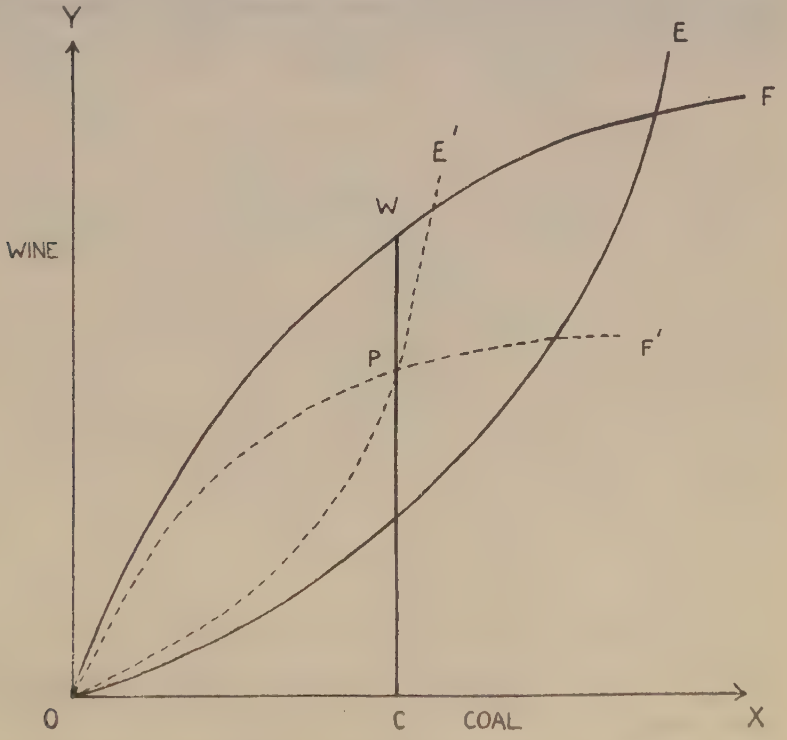
VI

We conclude with a few observations on how transport costs affect the terms of trade.

The transport costs between one country and a nearby market may be much less than between that country and more distant markets. An example is Yugoslavia, who can send grain and other produce more cheaply to Southern Central Europe (e.g. Vienna) than down the Danube, and then by sea and rail, to other markets. Thus the " extra " transport costs provide a field for the exercise of bargaining power between the two countries concerned (e.g. Yugoslavia and Germany). If one of them is in a much weaker position —for example because its goods are bulky relatively to their value—the other can insist on concessions in return for granting import quotas. To this extent we must modify our previous conclusions on the difficulty that one country will usually experience in " squeezing " another.

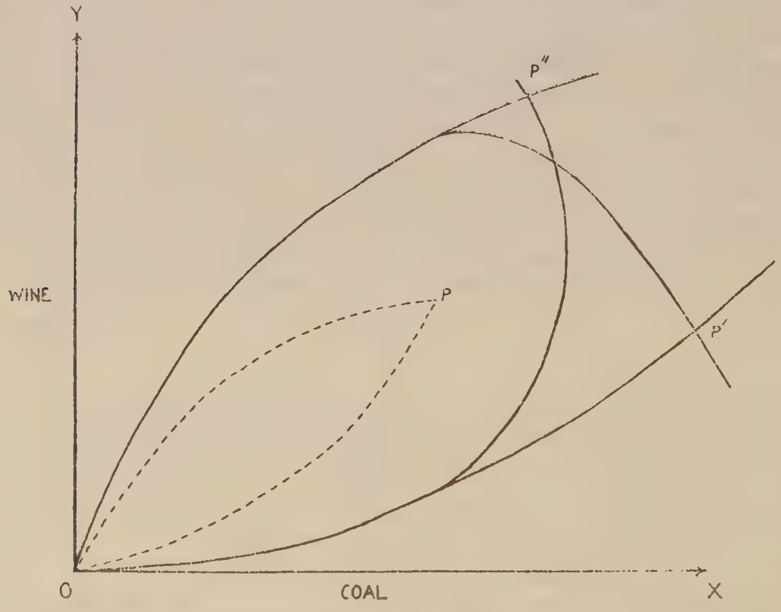
If one country performs all the transport this will tend to turn the commodity terms of trade in her favour. For other countries will pay her, in effect, in their goods, so that more of their goods and fewer of hers will come on to the international market than would otherwise do so. This of course applies to other services, and other " credits ", as well. For example, if after the war Great Britain finds herself with a much depleted income from overseas investments, banking commissions, and so forth, she will probably have to charge rather less for her exports in order to sell enough to pay for all the imports she will require.

The volume of trade is less than it would be if there were no transport costs, and probably the terms of trade are different. This is best shown by a diagram.



The French demand curve *OF* shows, for example, that France would give *CW* wine (supplied in France) for *OC* coal (delivered to France). The cost of shipping *CW* wine to England and bringing back *OC* coal to France, is *WP*, measured in terms of wine. Hence England could get, net, only *CP* wine for *OC* coal. The French demand curve can be regarded as shifting to the dotted curve *OF′*. The vertical distance (*WP* for example) between the two curves represents cost of transport both ways and presumably varies with the quantity of goods traded. Hence *OF′* diverges increasingly, downwards, from *OF*. Similarly *OE* becomes *OE′*.

Clearly the terms of trade may be very different from what they would be in the absence of transport costs. They are now determined by the intersection of *OF′* and *OE′*. These two curves up to their point of intersection *P* are derived from that part of *OF* up to a point vertically above *P* and that part of *OE* up to a point vertically below *P*. The behaviour of *OF* and *OE* beyond these points does not affect the present situation. But it would do so if there were no transport costs. And *OF* might suddenly curve downwards, or *OE* upwards, making the terms of trade much less, or much more, favourable to England than they are.



Thus the new equilibrium, in the absence of transport costs, might be at *P′* or at *P″*. Either is quite consistent with the existing (dotted) curves, which take account of transport costs.

A Note on Tariffs and the Terms of Trade

By Nicholas Kaldor

1. In the foregoing paper Dr. Benham raises the question whether the advantage accruing to a country through improvement in the terms of trade, consequent upon the imposition of a tariff, could compensate for the disadvantage arising on account of a smaller volume of trade.

It can be demonstrated that the introduction of a system of import duties will always improve the position of the country imposing it, provided that the rate of duty is below a certain critical level, and provided also that the introduction of the tariff does not lead to retaliation, in the form of the imposition of higher duties, by other countries.[1] It can also be shown that there is a particular rate of duty which makes the net advantage accruing from the tariff a maximum.[2]

2. Our demonstration is based on the Edgeworth barter diagram, and since the two parties in question here are two nations, and not two individuals, it employs the concept of " community indifference curves ", of which it is necessary to say a few words. A " community indifference curve " is the locus of points representing a constant real income for the community as a whole. In so far as individuals' tastes differ or their money-incomes differ, or the distribution of incomes varies, positions representing a constant real income for the community as a whole do not imply an unchanged real income for each individual taken separately. Some individuals will be worse off (as between two such positions) and others better off. But the real income can nevertheless

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[1] We shall ignore here the possible disadvantages due to increased unemployment in the export trades.

[2] The argument which follows is of course not new. *Cf.* Bickerdike, "The Theory of Incipient Taxes," *Economic Journal*, December, 1906, and Edgeworth, *Collected Papers*, vol. ii, pp. 340 ff. But the modern indifference curve technique permits a simple demonstration of it which it may be worth while to reproduce; and it also shows that the proposition is quite independent of any assumption as to a measurable utility function (with which at one time it was erroneously thought to be associated).

be regarded as constant for the community as a whole, if, supposing that those who are worse off were exactly compensated for their loss at the expense of those who are better off, this redistribution of incomes would leave the real income of everyone the same as before. In other words in order that two situations, A and B, should represent constant total real income, it is necessary to suppose that, if all those who are better off in B than in A were taxed to the extent necessary to make them indifferent as between A and B, and those who are worse off in B than in A were subsidised by an amount which would make them indifferent as between A and B, the total amount of taxes to be imposed would be equal to the total amount of subsidies to be paid.[1] [2]

3. Let us now suppose that there are two countries, France and England, and two commodities, wine and coal. In the diagram on p. 379 we measure the amount of coal bought by France (and sold by England) along Ox and the amount of wine bought by England (and sold by France) along Oy. The indifference curve IF_0 which passes through O then represents the level of real income of the French community in the absence of coal purchases from England, and the indifference curve IE_0 (passing through O) the real income of the English community deprived of French wine. OE and OF represent the two offer curves: the English demand curve for wine (and supply curve of coal) and the French

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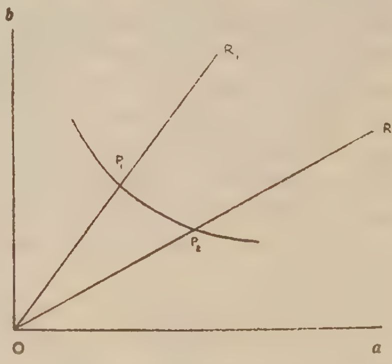
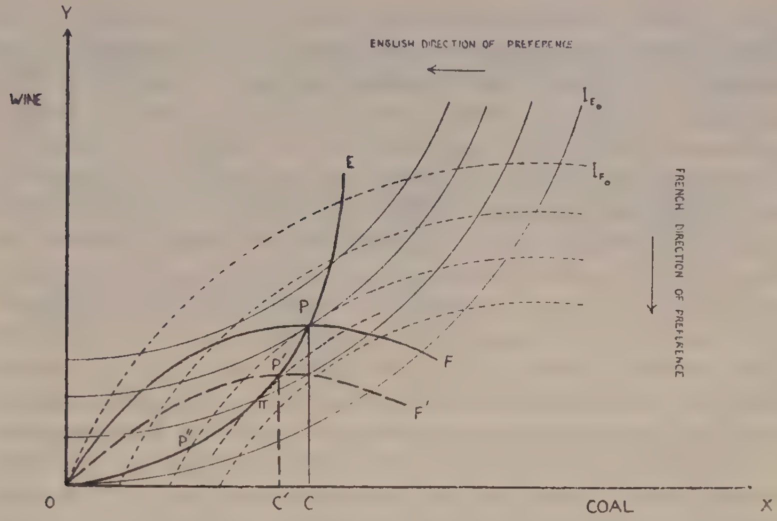
[1] For a further discussion of this concept, *cf.* my note "Welfare Propositions of Economics and Interpersonal Comparisons of Utility," *Economic Journal*, September, 1939, and Hicks, "The Foundations of Welfare Economics," *Economic Journal*, December, 1939.

[2] The derivation of the community indifference curve is as follows: Let us assume two commodities, a and b. Take an arbitrary point, P_1, on the line R_1. Since along R_1 the ratio $\frac{a}{b}$ is constant, it is clear that all points on R_1 to the right of P_1 represent real incomes higher than P_1, and all points on the left, lower real incomes. It follows, therefore, that there cannot be two points along R_1 which represent the *same* total real income. This must be equally true of any other line R_2 (representing a different ratio $\frac{a}{b}$). Hence there can be only one point (P_2) along R_2 where the real income is the same as at P_1. Finding these points for each of the radiuses R_3 . . . . . etc., and connecting up the corresponding points P_3 . . . . . etc., we obtain the community indifference curve representing the real income at P_1. The shape of this curve should be similar to the shape of an ordinary indifference curve.




Y
WINE
ENGLISH DIRECTION OF PREFERENCE
I_{F_0}
E
I_{F_0}
FRENCH DIRECTION OF PREFERENCE
P
P'
F
π
F'
P''
O
C'
C
COAL
X

demand curve for coal (and supply curve of wine). In the absence of import duties and transport costs, competitive equilibrium will be established at P with PC wine exchanged against OC coal, the French terms of trade being $\frac{OC}{PC}$.

If we now suppose that France imposes an import duty on coal, the French demand curve will be shifted (to OF'), in such a way that the difference in the height at any point between the old demand curve and the new represents the revenue of the French State (import duty × amount bought) in terms of wine. The resulting new equilibrium is at P', with $P'C'$ wine being exchanged against OC' coal. It is clear that the new position secures a higher real income for France so long as P' is to the right of P''—the point on the English demand curve which passes through the *same* French indifference curve as at P. The optimal rate of import duty is the one which secures equilibrium at π—this being the point on the English demand curve which is tangential to one of France's indifference curves (*i.e.* which therefore places France in the best position compatible with the English demand for wine). With the same reasoning it can also be shown that a subsidy on exports, by shifting the offer curve in the opposite direction, necessarily places the country in a worse position than before.

4. π is in fact the optimum monopoly position, and the corresponding price the optimum monopoly price—*i.e.*, the

price which would result in the absence of a tariff, if the French wine trade were in the hands of a monopolist who decided to exploit his monopoly power to the full. Our analysis shows, therefore, that the introduction of import duties can reproduce exactly the same effects as the introduction of monopoly. The extent to which it is possible to exploit the foreigner in this way depends on the country's monopoly power; *i.e.*, the elasticity of foreign demand for its products, and the extent to which the foreign power desires, or is able, to retaliate. (Retaliation will improve the position of the exploited country, but it might leave both countries worse off than they were originally). Provided that the elasticity of foreign demand is less than infinite there is always *some* rate of duty which it is advantageous to introduce in the absence of retaliation; and if the elasticity of the country's own demand for foreign products is markedly higher than the elasticity of foreign demand for its own products—an unusual case—this policy may be advantageous even if the "optimum degree of retaliation" of foreign countries is allowed for.

Charles Louis, Elector Palatine, 1617-1680[1]

AN EARLY EXPERIMENT IN LIBERALISM

By J. H. Clapham

Those who know their seventeenth century in England, or have read one recent novel, will recall the exiled Elector Palatine moving across the English stage and will remember who he was—the eldest survivor of the thirteen children of James I's daughter, Elizabeth of the Palatinate, patron of Sir Henry Wootton and John Donne, wife of the Winter King of Bohemia; one of those children who, in the old woodcuts, were shown wandering over Europe hand-in-hand with Elizabeth or carried on her back, to stir Protestant sympathy for the dethroned and refugee Calvinist hero. During the wanderings his elder brother, Henry Frederick, had been drowned off Haarlem before his father's eyes. Three more of the children died young; but the nine who grew up did enough to keep the memory of the family green for Englishmen and Germans; for Frenchmen and Dutchmen; for soldiers, philosophers, men of letters, statesmen and economists. Yet I do not think that in England the memory of Charles Louis himself is very green. He is mentioned only twice, and quite incidentally, in the relevant volume of the *Cambridge Modern History;* not once by name in either of three recent Oxford volumes on the seventeenth century, two English, one European. Yet he is a very fascinating figure, even as he appears in a queer compromising way in Gardiner's History; and far more so when you get him at home after the Peace of Westphalia in 1648, trying to build up again his Rhenish Palatinate devastated by the Thirty Years' War, and writing most admirable letters to his sister Sophia.

I perhaps need not explain that it was as economist that I first became really interested in the man; but as I dug a little into the mounds of the family history my spade—as I might have expected, had I started with more learning—hit upon bits of every important room in the life of the seventeenth century. I rather fancy that the last English scholar who had been into them nearly all in the company of the Palatine House was Sir Adolphus Ward; but in fancying this I may be maligning some hearer, or some friend. Let that pass. The figure, I say, is fascinating: if I fail to make it so to you the fault will be mine. The family one cannot neglect and, as time is short, it is fortunate that some of them are very well known. There were the two fighting brothers—Rupert and Maurice of the Rhine. There was Edward who married into the House of Gonzaga, and whose daughter Benedicta appears in the genealogies as a possible claimant to our throne on Queen Anne's death: she married into the House of Hanover. One brother died young fighting in the French service and another died not very old, turned Catholic for love of a daughter of the Duke of Nevers. Among the sisters was that able, masterful woman, the Electress Sophia of Hanover. A less notable daughter, with the charming name of Louise Hollandina, also joined the Church of Rome and became a fashionable French Abbess at Maubuisson. The older German historians wag saddened heads over her character; but she did not undermine her health, for she could read without spectacles in her eighty-fifth year. A third sister married a Ragozki of Transylvania and immediately died. The ablest, judged by academic standards, "the incomparable Elizabeth" as she has been called—the learned sister, whom Sophia in her letters to Charles Louis usually referred to as "the Grecian"—also eventually became an Abbess, but of an Abbey—Herford near Minden—which had fallen to a Protestant Prince. Under her it became a centre of Protestant religious life and inquiry, and of that German Pietism which in the eighteenth century influenced English Methodism and Evangelicalism. At Herford, Elizabeth received among others William Penn and that curious, now almost forgotten, figure Jean de Labadie, who, starting life as a French Jesuit, after going through almost the whole range of the Christian Churches—including a phase at Toulouse where, according to his enemies, he was an Adamite: as we should say, Nudist—ended just as a Labadist: Apostle of the *église à part*, the Church that must have no dealings with the world. He has been called a

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[1] The Creighton Lecture for 1938.

Quaker; but in spite of phrases in his writings which recall the full doctrine of the Inner Light, that he was not. If one had to find an English parallel to his final teaching one might choose those whom we call the Plymouth Brethren. He was at different times turned out of at least four countries, and he died in 1674.

Thus, in their various ways, several of the storm-driven children came to anchor in fairly comfortable ports. And Charles Louis also, in the end, got into the haven where he would be—the Rhenish Palatinate, though he never got back the Upper Palatinate, against the Bohemian frontier, which has remained a part of Bavaria ever since. But he had a full thirty years' reign in Heidelberg (1649–1680), working hard, living economically but well, drinking the wine of Bacharach and eating the fruits of the Neckar valley, which he used to say—and memory bears him out—were the best in Germany. He quarrelled with the wife whom he had married as soon as he got back his electorate—Charlotte of Hesse-Cassel—after she had borne him two children, and entered on a long and happy union with one of her ladies in waiting, Luise von Dagenfeld, who died in bearing him her fourteenth child in 1677. The case against Charlotte, at least for incompatibility of temperament, is strong: she was certainly not buxom in the original sense of the word. Some of Charles's theologians justified his desertion of her; but Luise's many children were never recognised as claimants to the succession, when the only legitimate son died childless in 1685 and the house faded out. There was a grim completeness about the seventeenth century history of the House, and of the Palatinate. The story of Charles Louis's life is framed in terror—the terror of the Thirty Years' War and the terror of those French invasions which, beginning not long before his death, left his land—a few years after it—once more desolate and his castle at Heidelberg blown up: *der gesprengte Turm* still lies, a solid block of masonry, under the ruined walls.

It was there that he was born, in December, 1617, in what the Electors of the sixteenth century, with his grandfather and his father, had made into one of Europe's most pretentious lesser palaces. Immense works by a French architect were still unfinished when his father was elected King of Bohemia and the Bohemian War broke out. Before Charles Louis was three years old the Battle of the White

Mountain had been lost; soon Catholic armies were closing on the two Palatinates; and the wanderings of the family had begun. They had relatives and sympathisers both in England and Holland; and for the next twenty-seven years Charles Louis was, so to speak, based in Holland with repeated incursions, as he grew older, into England. Those twenty-seven are the great years of Dutch freedom, Dutch wealth, and Dutch leadership in economics and art, in thought and scholarship. The older biographers write like courtiers of the wonderful education that the heir to the Palatinate received at Leyden—how he studied divinity, jurisprudence, history and mathematics, without neglecting the military art, pursued under the best of masters, his great uncle Henry Frederick of Orange. A well educated man he most certainly was—his letters are evidence enough of that—and although his studies were a good deal interrupted, he had some claim to the courtiers' title of a learned prince. His father died in 1632 and he became heir to the Palatine Electorate. Next year the hopes of the large fatherless family rose; for Gustavus Adolphus's Swedes, fighting their way south through Germany, reached the Palatinate and forced the Imperialists to surrender Heidelberg.

Nominally the Palatinate was restored to the heir, Charles's uncle Philip acting as regent for him. But Oxenstierna, the great Swedish Chancellor, and Swedish garrisons in all the principal towns decided everything—for the year or two that was allowed them. In 1634 the miserable country became the battle-ground for Swedes, Imperialists, Bavarians and French. No horror was lacking, from nameless mishandling of townsmen and peasants to the cannibalism of a starving people. In all this the second conquest was even worse than the first, during which the fall of Heidelberg (1622) had been followed by bestiality enough. The wandering family is heard of shortly in Metz, en route for their base in Holland.

Next year (1635) the English phase of Charles Louis's life began. He was nearly eighteen, of age for a prince, and he went with young Rupert to beg help from his uncle Charles in London. There, his German biographers say, he lived as an idle cavalier about the Court. A bastard was born to him while in England certainly. Much more I do not know. At least he learnt to rate the English drama above the Spanish or the French. Years later he himself made an acting version of Ben Jonson's *Sejanus* for use at Heidelberg; and he knew his Shakespeare better than the nineteenth century German editor of his letters—for when he quotes Mistress Quickly and Jack Falstaff the editor's solemn comment is "*Sic!* John". The letters, by the way, are all in French, but with scraps of German, Dutch and English thrown in. One scrap of the English I must rescue, at the risk of irrelevance, for inclusion in a Puritan anthology. It is a reputed prayer of a Scottish minister for—or shall I say about?—our King James I: "Break an arm or a legge of him, good Lord, and set him up again". Charles Louis applied it, later in his life, to the Swede.

Three years passed before any result came from his attempts to enlist English sympathy for his cause. Sympathy was real enough. England was taking what, in the long-worded slang of to-day, would be called an 'ideological' interest in continental affairs. Heidelberg had been the great centre of German Calvinism, Charles Louis's predecessors its leading princely upholders in Germany. These were strong recommendations to serious Englishmen of the sixteen-thirties. Probably, however, Charles Louis's courtly connections and his life of the long-haired, theatre-frequenting, cavalier alienated readers of Prynne's *Histriomastix* (1632). John Milton would never have tolerated Charles's lifelong paltering with "the Babylonian woe". His cause was good, but he was a poor ambassador of it. And, just then, he was in his least serious phase. Later in life he appears, in his policies, actions and above all his letters, serious enough but also enlightened—*aufgeklärt* in the special German sense—rather sceptical, though not at all contemptuous of religion; utterly out of sympathy with the fanaticisms and intolerances of the sects, but a patient worker in the rather hopeless cause of Holy Union and Concord. He knew his Bible as all well educated men of his century did. Someone credits him with a love of Thomas à Kempis, but I find that hard to believe; though no doubt he had read the *Imitatio*. Lovers of the *Imitatio* do not write about "le bon Dieu" and "the Gods" in their private letters. The noblest thing in those letters, written when he was a weary but strenuous ruler, is their genuine humanity—"what tears at my heart is that, if I die, I leave so many poor innocents at the mercy of their enemies": or again, "I will keep out of war as long as I can, don't think that I am become a coward, but

I have great compassion for the human race, especially for the little folk." That is better than Cromwell from Drogheda; even though Charles Louis's letters left him open to the charge, from his older German biographers, that his was " a definitely worldly nature ", breathing the atmosphere of the Franco-Dutch profane cosmopolitan culture in which he grew up.

Some English help for the Palatine came at last in 1637–8, mainly through that tireless servant of Charles Louis's mother and the Stuart cause, William Craven, later Earl of Craven—the man who saw nearly the whole seventeenth century, and how many strange things!—for born in 1606, he died in 1697. With the £30,000 that Craven raised for him Charles Louis bought a few troops—you could always buy troops during the Thirty Years' War—and started from Holland in '38 on a crazy raid into North Germany, the Bishopric of Münster in fact, far enough from Heidelberg. It was a perfect failure. Young Rupert, learning war, was taken a prisoner to Vienna: Craven was also taken, but bought himself free in '39. The Elector, in flight, tried to ford the Weser in a six-horse coach; but lost the coach and all but his life and what he stood up in. He made first for Hamburg and then for his Dutch base.

Back in England in '39, he and his uncle tried to lay their hands on the mercenary army of Bernhard of Saxe-Weimar, which had just won Alsace for Cardinal Richelieu. (Bernhard died that year.). Again the loyal Craven gave, or raised, the necessary money and Charles Louis tried to cross France, nominally incognito but very well known to the Cardinal's agents—a stupid enterprise. Richelieu had him arrested at Moulins in the Bourbonnais for travelling without a passport —I do not know why he went so far South; perhaps to cover his tracks. He was sent a state prisoner to the donjon-château of Vincennes and kept there until Richelieu had bought in Bernhard's colonels for the account of the King his Master.

The great dreary war was now going better, one can hardly say for the Protestant, but certainly for the anti-Imperial cause. It had long since degenerated from a religious conflict into a struggle for lands and power between the Hapsburgs, with some German Catholic allies, and the Swedes and French with some Protestant allies. " What the Swede intends and what the French " it was essential for anyone with political interests like John Milton to know, if he could. Had Charles Louis been able to exert military pressure just before and just after the opening, in 1643, of the peace discussions—protracted and dreary as the war itself—he might have got more out of the great deal of what we call the Peace of Westphalia. But at that very moment his secondary base in England failed him. It is curious to watch his rather compromising and undignified efforts to retain it; but princes in exile cannot sacrifice too much to dignity, unless they are prepared to fail with dignity like the Comte de Chambord in 1873.

Let out of Vincennes in 1640, Charles Louis is met next year with our King Charles in Scotland. Later, he stood beside the King when Speaker Lenthall could only see what the House instructed him to see, and when Charles saw that the birds had flown. In '42 he was sent by the King to report on the awkward situation at Hull; but after the raising of the royal standard at Nottingham on the 22nd August, while Rupert and Maurice—like Kentish Sir Byng—stood for the King, he slipped into the background—may I insinuate to change his coat? He is a good deal in Holland. When in England, he stays quietly—pursuing his studies, the courtly German biographers say—with Dean Christopher Wren, Sir Christopher's father, at Windsor. Perhaps he read more Shakespeare. In August, 1644, he suddenly and publicly landed from Holland at Greenwich. Gardiner always suspected, though he allowed that almost his only evidence was the rage of Vane and St. John at this indiscretion, that they had been playing with the notion of Charles Louis as a possible alternative King—a sort of pre-incarnation of William of Orange—and that they found his presence at the wrong moment on this side the water disconcerting. The other piece of evidence is that he proceeded, "ostentatiously" as Gardiner puts it, to take the Covenant. If he was not playing for the part of a convenanted King, he was certainly playing to the Calvinist and Presbyterian gallery. That he could do without hypocrisy. Calvinism was in his family tradition, and he had never, like his uncle, been a devout Anglican.

His movements for the next three years are obscure. He was a good deal here and a good deal in Holland. His eyes naturally were on the Westphalian towns, where the future of Germany was being decided. In March of '47, however, he is here negotiating with Oliver himself. The Presbyterian majority in Parliament was trying just then to disband the New Model army. Oliver was in doubt. " In frequent conferences " with Charles Louis he weighed the possibility of going to the German Wars with as many of the New Model as he could get to follow him. (Think of it ; Oliver thrown in, like the Old Guard at Waterloo, to snatch a decision !) Then —Oliver was at Saffron Walden —Cornet Joyce went to Holmby House ; and the German wars, which indeed were nearly over, were forgotten. In August the Elector is visiting the army—now creeping nearer London ; first Reading, then Putney—and getting a warm welcome. But Oliver does not need him, and the conferences are not resumed.

Next year, hastened by military events in which none of the Palatine House had a share, came peace in Germany —and an offer to Charles Louis from his backers in Westphalia of all that they could get for him ; the Rhenish Palatinate, less a stretch of country generally known as the Bergstrasse, North of Handschusheim, across the Neckar from Heidelberg, which went to the Archbishop of Mainz, and a new eighth Electorate, the Catholic Bavarian cousin having managed to retain the seventh, which by right was Charles's. From London he sent off his reluctant acceptance ; but he waited on there—waited until the 30th January, 1649, drove him in horror and panic to Holland once more ; thence into gaunt and wasted Germany ; to Cassel, the home of the Hessian Princess whom next year he married ; and so, in October, 1649, into his curtailed and depopulated Electorate and the castle on the hill above Heidelberg.

There are wild estimates of the amount of the depopulation due to thirty years of war, but no exact calculation. The most moderate literary estimate is that the population was one-fifth of what it had been thirty years earlier. This I can believe ; for it happens that the neighbouring state of Würtemberg is the one German region for which figures reasonably acceptable to statisticians exist. They are based on military surveys of the number of households and ecclesiastical records of the number of communicants, in a society where practically every adult took the sacrament as a matter of public duty. So estimated, the Würtemberg population fell from 440,000 in 1622 to 121,000 in 1645, or by nearly three quarters. That the more brutally used population of the Palatinate should have fallen by four-fifths is therefore perfectly conceivable. Villages of 500 souls fallen to 100 or four villages in five empty waste and desolate; whole towns emptied or nearly emptied; others with population kept up better by inroads of refugees, yet with jealous burgesses clinging to the bits of trade and craft privilege that remained to them—unwilling to give the refugee burgess rights—that is the picture which we have to try to imagine.

German towns of the late sixteenth and seventeenth centuries had mostly settled into that narrowness and meanness of outlook which is embodied in the contemptuous German word *kleinstädtisch*. A townsman was a different creature from a countryman, with a different law, different property rights, and different taxes. He alone could practise any but the most elementary trades. Every town had its *Bannmeile*, the radius within which it was economically supreme. The towns had bartered away political freedom to their princes for the right to manage their parish-pump affairs in their own way and bully the adjacent peasants, who paid market tolls and had to buy anything that they could not make at home from the gild "brother" of the town. He was very often just a narrow-minded jobbing workman—carpenter, tailor, cobbler—or the tiniest of employers, perhaps with a mate and a lad.

The Palatinate had not been quite so mean in these matters as some of the other German states; but that surviving sons of townsmen who were infected with this beggarly spirit in 1620 should be meaner still in 1650 will surprise no one. They had grown up in poverty and terror. Their town may have been sacked more than once. They clung to any right or chance of a privileged livelihood which tradition supported: who dare blame them? But they were intractable raw material for a prince who—to his great honour—put the economic restoration of his country before all other considerations. He laboured at it for the next thirty years, inspiring, ordering, calculating, economising with a touch of miserliness which has brought him into some disfavour—he was hard to those lifelong refugees and princely beggars, his mother and Rupert.

There had however been another bourgeois element in the Palatinate before 1620—Calvinists in flight from France or from the Low Countries; men fit to people new little Genevas if they could find them; men of conviction and enterprise, who had taken Calvin's teaching seriously and shared his belief that—in the words of a hymn of Charles Wesley—" their earthly task who fail to do neglect their heavenly business too." I need not dwell on the type or the theme. Both have been sufficiently dwelt on by historical writers of late years, and too much sneered at by literary people. Those who dwell on the type and those who sneer at it often take just the same (or a parallel) high view of their own earthly task, but have got into the trick of despising economic enterprise because it is mixed up with selfishness and competition. As if learned, or literary, or artistic, or political enterprise were not! But I am digressing.

As early as 1586 a small community of Walloons had made a little town of hard-working men with a calling to God and industry, near the deserted monastery of Frankenthal, to the West of the Rhine, South of Worms. They had the full, strict, social-religious organisation of Geneva or of an early New England town; and, what is of special interest to the economist, an equally strict gild system—rules how things should be made, where, and when, with what number of workpeople (if any) and with what wages. (The things, I should add, were mainly textiles.) Twenty years later (1606) an attempt had been made to utilise further immigrants. On the flats of the Rhine valley, below Heidelberg, where the Neckar joins the main stream, Charles Louis's grandfather, Frederick IV, began to make out of the big village of Mannheim the fortified place that he called Friedrichsburg. The peasants petitioned for freedom and all burgess' rights—just as villeins of the Welsh Marches might have done in the twelfth century when a Marcher Lord was building his castle—but were treated by the Elector's officials with some contempt. If Friedrichsburg was to be a town, they wanted as burgesses " merchants and other respectable people ", as they put it, not rustics " who would remain peasants (boors) to their graves ", and of whom only two or three could write or read. So at length most of the peasants were removed—fairly, I must note, and with compensation—some to a new village nearby with the very significant name of Jungbusch (it was a clearing in the woods) and some to holdings in adjacent manors belonging to the Elector. In this way room was made for the garrison and for the hoped-for respectable townsmen; who however came in but slowly. The original charter (of 1607) has not survived; but all the evidence points to the constitution having been of the strict Calvinistic and economically regulated sort that had been set up at Frankenthal. However that may be, Friedrichsburg-Mannheim did not grow much before war swept round it in 1621–2. When Charles Louis came back, there had for years been no burgesses, though usually a garrison of one side or the other; and all that remained were the fortifications, the Rathaus, and bits of wall and cellar of ruined dwellings.

Charles had known the great towns and free commercial enterprise of Holland. He had known London, where business was getting freer every year. He took Dutch advice and decided that the way to revive Mannheim, and one way to revive his country, was to open up trade with Holland if he could; to encourage immigrants, above all Calvinist business men; and to leave trade and industry free. And so, says the German scholar who brought all this to light from the archives nearly fifty years ago—though few Germans, and I think no Englishmen, have paid any attention to it in writing since—he was led to make the first experiment in free trade and free industry in all German history; there, at Mannheim, by his charter of 1652. He kept Friedrichsburg as a fortress with the government appropriate to a fortress. But by it he began to lay out the rectangular plan of the new town; planning was easy because not a single pre-war urban landowner survived. In this town all was to be free—for twenty years no tolls; no rates; no octroi; for ever, no gilds; no restrictions on the number or type of man, or the tools or the machines, that any one might employ; no rating of wages by authority —*Laissez faire*, *laissez passer* a century before that catchword was coined.

And with this economic freedom went freedom of religion. True, the principal immigrant burgesses were Calvinists—Dutch, Walloon, French, English—and the Calvinist ministry of the Palatinate was no more tolerant than our Puritans. But there were in Mannheim Anabaptists; for a time some Polish Socinians; a group of Sabbatarii (Puritans who wanted to keep the Jewish Law); Lutherans; a few Catholics and a strong handful of Jews. Later Charles Louis built a Church in the Friedrichsburg and dedicated it to Holy Concord. He managed to get Calvinist, Lutheran and Roman Catholic clergy to join in the opening ceremony. We English note with some shame that this was before the Popish Plot and before the Irish Penal Code.

For the economic development of Mannheim, Charles Louis relied especially on one man—a capitalist entrepreneur of the pure blood. Clignet, that was his name, is called a Dutchman ; but the name implies either Walloon or French stock. Merchant, industrialist, urban landowner, builder of a good deal of the town, a leading figure in its administration—Clignet was all that. He had lime-kilns, a brick and tile works, and many other enterprises. Enlightened Palatine officials planned the rectangular layout of the town, with standard houses for the different streets, and numbers and letters for streets and quarters—Mannheim B, 22nd street, as it might be in New York. Naturally it did not all get done at once. Again, as in many an American town, you had mean houses and planned houses side by side along the straight streets.

There were obvious obstacles to quick progress. An oasis of free trade in a poor land, whose other towns clung to restrictive policies, surrounded by little states who did the same, had a hard struggle. Many of the early settlers came—and went away again. Plague struck the model town in 1661. In the mid-seventies Turenne was raiding and burning in the Palatinate—making war without declaring it and sending an envoy to explain what a good friend of the Elector his Master wished to be. (" Cela n'est-il pas contre le droit des gens ? " Charles wrote to Sophia. It was ; and it is ; and it continues under our eyes.) Yet gradually Mannheim grew : it had about 4,000 inhabitants in 1663 and about 12,000 in the 'eighties—a substantial town for seventeenth century Germany. The Jews, who came in 1660, found that they could not only live where they liked, instead of in a ghetto, but that they could build houses as a business proposition—to sell or let. A certain Jewish doctor of medicine—Doctor Hayum—did very well out of this building speculation ; and later the Jews claimed that they had built a quarter of the town. They were prominent too in the wine and cattle trades ; and in the 'eighties their butchers undercut the Christians, selling meat cheaper and throwing the bread in free. In trade there is no new thing under the sun. And here is the triumph—the short-lived triumph, I fear—of Charles Louis's policy. (He was dead when the episode happened.) The Christian butchers complained and the Town Council of Mannheim sent them about their business.

Mannheim's growth was largely due to Charles Louis's judicious encouragement of any form of economic activity in his dominions which would help trade with Holland and attract Dutch capital. Endless tolls, and high costs of carriage, on the Rhine made all cheap bulk trade difficult. So the Palatines were encouraged to grow grapes and ship wine. Charles Louis allowed his foresters to cut and ship the finest timber—great selected pines and oaks spared hitherto—because, being more valuable per cubic foot, they would stand high costs of carriage, and Holland had an almost unlimited demand for timber. Her towns stood on piles; and then there were her ships. No wonder that we find important Dutch timber firms in Mannheim.

For all this a revived rural population was needed. Natural growth did much. Many Palatines who had fled returned. By every possible device men were procured; and when it came to procuring men for the land, Charles Louis forgot free trade, used any feudal rights that he could lay his hands on, and became involved in what Sir Adolphus Ward used to call "the well-known *Wildfangsstreit*" (I have often wondered to how many English scholars it was, or is, well known, or even known?). That "strife about the taking of wild men", to translate literally, arose in this way. There was an ancient custom of the German Kings that wanderers, vagabonds and masterless men—*Wilde*—were theirs, to be turned into serfs, and taxed at will. It was claimed that this royal right, all but forgotten by 1650, had passed to the Electors Palatine, and could be exercised by them over some adjacent lands which were not theirs. So Charles Louis's agents went about seizing *Wilde*—after thirty years of war there were naturally plenty—and settling them, on quite favourable terms, as tax-paying serfs (*Leibeigene*) in empty Palatine villages. Result; a series of quarrels, suits, and almost wars, with neighbours of the Palatinate, mostly Bishops and Archbishops; the "well known" *Wildfangsstreit.*

Gradually, as population grew, the rich land of the Rhine valley—fertile from long compulsory fallow—was used for commercial crops. The brutal soldiery of the horrible war had spread the habit of tobacco smoking in Germany. But the tobacco had been imported. It was a Mannheim burgess with a French name, Puché, who—about the time of our Restoration—first made money by growing it there in the fields. The practice spread; and soon Mannheim had an active tobacco trade. With tobacco came oil-seeds, dye plants and such like to vary the routine of three-field agriculture in the Palatine village.

Inside the town industrial freedom produced its natural results. There probably were abuses, but they are not recorded. What is recorded is a prompt growth of the average business unit. Of all European gilds, the German had most jealously limited the number of men whom any master craftsman might employ. Two was the usual maximum; the average was much less. In Mannheim we hear of bootmakers with seven journeymen, besides the apprentices. Brewing, hitherto a domestic job in Germany, was now carried on in regular small breweries—Mannheim had twenty—run by Dutchmen and other Low Germans. Huguenot master-clothiers came in from the manufacturing region about Sedan; and a regular post was set up for their convenience between Sedan and Mannheim. An attempt was made in Charles Louis's last years to tempt a big silk manufacturer, named Passavant, from Bâle; but it was not successful. Builders of some sort there evidently were, besides Clignet. The old German way of building a town house by arrangement with master-carpenters, master-tilers, and so on would not meet the situation, which resembled that of the rebuilding of London after the great fire—where the modern building contractor can easily and inevitably be traced.

Only one thing seems to have been regulated officially in the economic life of Charles Louis's Mannheim. There was what we should call an Assize of Bread. The regulation of meat prices was tried and abandoned, because free competition kept prices lower. What happened when the Christian butchers grumbled we have seen. I had nearly said that this is all very modern. But of course it is not. We are back in an era of regulation, as we are back in an era of intolerance. Let us say it is very liberal, very nineteenth century.

So was Charles Louis's conduct of intellectual affairs. The University of Heidelberg, almost Germany's oldest, and before 1620 a great centre of legal and theological studies, was in 1650 waste and empty like everything else in the Palatinate. All that was best in books and MSS. of the famous *Bibliotheca palatina* had been carried over the Alps in 184 boxes to the Vatican. Some was got back after Waterloo, because Napoleon had in his turn pillaged the Vatican; but the bulk, I believe, is still there. By 1652, Charles Louis had arranged for a stately reopening of his University: 119 students were matriculated that year, and within a dozen years, with an average matriculation of about 75, the University was famous again. Its theologians—Spanheim, Fabricius, and others—are probably now forgotten, but were great men in their day. Its greatest jurist Puffendorf, author of the *De Jure Naturae et Gentium* (and many other books) is still quoted in our treatises of International Law. In the early days of the revived University, Charles's sister, "the incomparable Elizabeth," "the Grecian," was all but Professor of the Cartesian Philosophy there. But the most famous academic appointment was one that was never made. In 1673 a chair was offered to Spinoza, the unorthodox Jew. Provided he would treat the religion of the State with respect, he was promised *philosophandi libertatem amplissimam*. But he preferred to go on thinking and polishing his lenses in Holland.

By the standards of his century, Charles Louis was by that time getting an old man. Since 1658 he had been living happily with the fruitful Dagenfeld. After holding on for a few years as a protest, his Hessian wife Charlotte had retired to Cassel in 1662. Elizabeth the Cartesian had taken sides with the legitimate wife and had withdrawn, first to Cassel, and then to her new life as Abbess of Herford. Sophia was married in Hanover. Charles's only legitimate daughter—Elizabeth Charlotte, known in the family as Liselotte—a gifted creature, plain, and full of character, had married—and had been, may I say, jockeyed by her father into becoming a Roman Catholic to marry—the widowed Duke of Orleans, whose first wife had been our Charles II's favourite sister. Her German admirers say that "the proud Palatine", as she was called at the French Court, lived in France for fifty years—writing interminable and excellent letters to her scattered relations—with a German heart beating in her bosom. I think that is true; but there sprang from her a very French race—the Regent

Orleans, Philippe Egalité, Louis Philippe and the present Orleans House.

Charles Louis died in 1680. In his last letters he is arranging medals in his library; sending mock devout messages to his sister the Abbess of Maubuisson; and speaking of the coming release of his spirit seriously, but like a reverent Stoic, not like St. Paul. Five years later, his only legitimate son Charles—whose early life had been repressed, unhappy, and not vigorous—died without issue, and the Palatinate passed to a collateral line, who were Catholics. That did not save them in the coming French wars; for Louis XIV, just then at his greediest, laid claim to the Palatinate—through the wretched Liselotte. Even before Charles Louis died the land had suffered, as we have seen, in the fighting of the seventies which ended with the Peace of Nymwegen. Between 1688 and 1693 it was fought over and ravaged by the French. Mannheim was burnt in 1690 and the Church of Holy Concord in the Friedrichsburg was left in ruins. The fortifications of Heidelberg were blown up in one campaign; the Schloss itself in another. Eventually the new electoral line abandoned the old capital and began, in 1720, to build their vast new Schloss at Mannheim. And Mannheim lost all special character, becoming a typical eighteenth century *Residenzstadt*, a Pumpernickel. *Laissez faire* disappeared; everything was supervised; gilds with their rules and restrictions were set up; and all that remained of Charles Louis' economic schemes was the rectangular layout of the centre of Mannheim, and the right of an eighteenth century master-craftsman to have a few more employees in Mannheim than in most German towns. The University however did not die; though like other Universities of the eighteenth century it slept—some of its chairs held by Jesuits, birds of passage who flitted away to other duties; some held almost hereditarily by father, son, and grandson. But, like Mannheim, it was to wake to new life in the nineteenth century under a new dynasty. Happily there is in history rebirth as well as decay and destruction.

John Francis Bray

By H. J. Carr

JOHN Francis Bray, the author of *Labour's Wrongs and Labour's Remedy*, was born in the United States of America in 1809. Until recently, nothing was known of his history beyond the fact that he was the author of the book mentioned. Dr. Esther Lowenthal, in her thesis on the "Ricardian Socialists", wrote in 1911: "Of Bray's life, nothing is known." Mr. H. P. Quack, an American banker who devoted one volume of his seven volume work, *The Socialists: Persons and Systems*, to forgotten figures from the England of the nineteenth century, gave a chapter of twenty-six pages to Bray; but says: "Of his life we know nothing. His name is written in flowing water."

About twenty-five years ago, the late John Edwards discovered a number of letters written by Bray and his brother Charles, which shed some light upon the mystery. It was, however, left for Miss Agnes Inglis, of Ann Arbor, Michigan, to find all that was missing. In the little farmhouse in Pontiac where Bray ended his days, and where his daughter-in-law was still living in 1937, there existed a small, battered trunk, which contained the whole of the literary output of the writer, in whose first book Karl Marx had found a complete refutation of Proudhon's claim to originality. Amongst the manuscripts were several journals and a brief sketch of his life, prepared for publication by Bray himself. This was written in 1890 and 1891, when he was in ill-health; and when, unfortunately, his mind was not as clear as one might have wished. Some facts which have been omitted can, however, be supplied from the journals.

Bray's ancestors were farmers and cloth manufacturers in the neighbourhood of Huddersfield for many generations. His father, whilst living in Leeds, became known as a composer and singer, and was, early in the nineteenth century, engaged by the Wood and Warren Company of Washington, U.S.A., as a theatrical performer. In 1808, he was married to a Miss Hunt, who was connected with the same Company as an actress and dancer. Their son, John Francis, was born on June 26th, 1809, in Washington. In 1814, the family removed to Boston; and the father and mother performed in the old Federal Street Theatre until 1822, when the father becoming seriously ill, decided to return to England for medical treatment. Taking his eldest son with him, he set out from Philadelphia in the early days of May, 1822, in the ship "Moss" for London.

The earliest letter preserved is one written by John Francis to his mother in Boston, breaking the news of his father's death. It tells how the travellers left London in a sailing vessel for Hull, where they were met by a near relative and taken to Leeds the same night. The sick actor sat up with relatives for an hour-and-a-half and seemed very well; but afterwards rapidly sank and died within two days of his arrival at his sister's home, and on his fortieth birthday. The letter concludes:—"I think it would be better for me if you should like it, to stop with my aunt and go to school, and learn some business which might be of service to you and my brothers and sisters. I like Leeds very well, and shall soon go to school." He was now thirteen years old.

The mother was left in Boston with a family now increased to three boys and two girls, all unprovided for except through her meagre salary; but a host of kind friends came forward and assisted them until their mother's death in 1825. John had been adopted by his father's sister, a milliner, who had apprenticed him to a printer in Pontefract when his school days were over. Upon the death of his mother, she had sent for the two girls, who worked for her for several years; but both died of consumption, induced by the long hours of work in ill-ventilated workrooms.

During the fourth year of his apprenticeship, Bray's master failed in business; but he found another situation at Selby, where he served out his apprenticeship until June, 1830. He tells us that "apprentices generally had to go 'on tramp' when their time was up, very incompetent and half-taught workmen. The smarter ones educated or improved themselves afterwards; but the dull ones lived from hand to mouth, always the last to be given a job, and the first to be turned away. Those apprenticed in newspaper offices had better chances for improvement as compositors."

After completing his apprenticeship, Bray returned for a short while to his aunt's in Leeds; but not wishing to be a burden to her, followed the custom of the time and went "on tramp". He was able to obtain a little relief from the secretaries of the trades unions, to whom he showed his trade union card; but he was compelled to put up in low lodging-houses, never knowing when he would get another scanty meal. He confesses that he was half tempted to turn highwayman; but that the thought of his sisters prevented him. It was during this period of his life that his mind first turned to a consideration of the injustices under which the workers suffered; and at this early period he determined that he would investigate the causes and try to discover the remedy.

In 1832, he returned to Leeds after several months' absence, and obtained work. At that time a great effort was being made to obtain the abolition of the tax on newspapers. The tax bore heavily on the workers, who could not afford to buy taxed papers. It also hampered the efforts of the reformers, who wished to start popular newspapers. Many unstamped papers were printed sporadically; and the publishers and dealers were sometimes apprehended and sent to prison. This was the fate of the publishers of an unstamped paper, *The Voice of the West Riding*, which was printed in Huddersfield, in consequence of which friends of a free press sent to Leeds for a printer to take charge of the office. Bray volunteered, and continued to issue the paper without molestation. When the publisher was liberated, Bray obtained a situation in York. In a short time the crusade against the unstamped papers was renewed with such vigour that about a dozen men and women were in prison in York Castle, among them the Huddersfield publisher. The prisoners were fed on bread and water, had comfortable quarters on the debtors' side of the prison, with nothing to do; so Bray, taking with him books and papers, went to see them frequently.

On his tramps, Bray had sworn that if he ever obtained work he would try to discover the cause of "trampism". So, when settled in York in 1834, he set to work in earnest to solve the problem. But he had had no experience in composition, and did not know where to begin. It was natural that, being an American by birth, he should be prejudiced in favour of republicanism. It is obvious from a letter written from Boston in 1834, by his brother Charles, in which he states that "England must be a poor place for a Republican spirit to flourish", that Bray's description of conditions in England had been unflatteringly compared with what existed in America. The natural consequence, as he confesses, was that he placed all the blame for labour's troubles upon monarchy and aristocracy, and taught rebellion against them.

So, in his first efforts at composition, he commenced an onslaught upon these powers, and tried to show the superiority of republicanism. "He hammered away right and left, re-wrote his book, changing paragraph after paragraph, and putting it into shape according to his enlarged experience. After finishing everything, he sat down on the bank of the River Ouse one day, reading his book and felicitating himself that he had discovered the cause of 'trampism'. But he happened, mentally, to go back to Boston, and ask himself, 'Did you ever see any beggars, or poor, or unemployed men in Boston? Yes, plenty of them!' One question led to another, until finally the great fact came to him that republics had no pre-eminence over monarchies in the matter of employment and good social conditions for the masses."

"This discovery was a great blow to him. All his labour had been wasted. He had solved nothing. He must begin anew. By accident, he met with small works that attempted to defend the existing social system and show that it was natural and therefore right. But he saw through these fallacies, and conceived the idea that class divisions into workers and employers were the cause of all great social evils, by creating great wealth on one side and poverty on the other; and that such a condition of society must ultimately be fatal to all republics, from the hostility of upper wealthy classes to all schemes and changes that would elevate the lower ones, and free them from wages servitude to capital."

"This was the leading idea of *Labour's Wrongs and Labour's Remedy*, so far as the wrongs went; and the remedy was to be found in universal co-operation between capital and labour in all occupations, voluntarily or by force."

This last extract from his *Brief Sketch* shows an interesting lapse of memory. Bray's first book carefully avoids all mention of compulsion, which would, in any case, be a very insecure foundation upon which to build co-operation. It was much later in life that, apparently becoming impatient at the slow progress of a new social order, he half-heartedly advocated "compulsory co-operation" in *God and Man a Unity*.

In 1835 Bray wrote to his brother Charles to tell him that he had decided to take part in the labour movement. He informed him that he held principles which, if acted upon, might result in misfortune, but could not bring him disgrace. In issues of the *Leeds Times*, from December, 1835, to February, 1836, he wrote five "Letters for the People", in which he dealt with natural rights and human equality. From the same source we learn that he gave an address at the first meeting of the Leeds Working Men's Association in 1837, and was elected treasurer. The issue of the *Leeds Times* on November 11th of the same year contained the following advertisement :—

"On Wednesday evening, November 15th, will be delivered by a member of the Association the first of a series of three lectures on 'The Working Class—Their True Wrong and Their True Remedy'. Lecture 1. Consideration of the Present State of Society as divided into Rich and Poor—Inequality of Condition subversive of Equal Rights and Equal Laws—Bad Government a Consequence and not a Cause of Inequality of Condition—such Inequality inseparable from the present Social System.

"Lecture 2. Wednesday, November 22nd—The Gain of the Capitalist under present arrangements, the Loss of the Producer—The Governmental Wrongs and Burthens of the Productive Classes placed in juxtaposition with their Social Wrongs and Burthens—overwhelming Preponderance of the last—all mere Governmental Changes utterly worthless to the Working Classes.

"Lecture 3. Wednesday, November 29th. A Social Change necessary and inevitable—the Change of System advocated by Robert Owen not attainable without some intermediate Movement—Consideration of a First Step—The Discouragement and Encouragement of the Political Economists—Ultimate triumph of the Democratic Principle and establishment of Social as well as Political Equality.

"In order that the benefits resulting from Free Examination and Discussion may be partaken of as extensively as possible, the Lecture, &c., will be thrown open to the public—Admission, One Penny. The Room of the Association is open every Saturday evening from Seven to Ten as a News Room to which the Public are admitted gratis."

From the foregoing it will be seen that *Labour's Wrongs and Labour's Remedy* followed very closely the scheme outlined in the synopsis of the Lectures. In 1838 Charles Bray wrote to his brother: "I observe in the papers you sent me a notice of the Lectures you had been delivering; and think it must have been a trying effort for you. I trust they gave satisfaction, which would in some small measure compensate you for the hours that you must have spent in their preparation; if you publish them, I would like a copy. I did not think we should have an author in the family. . . . Does your society gain ground? I think it would if all the members had the same zeal in the cause that you have."

The next letter from Charles Bray is dated December 5th, 1838. It includes the following :—. . . "I presume you are as deeply engaged as ever in your plans of benefiting Society. I observe from the papers that there have been large meetings of the people in various parts of England. . . . In your letter you predict a great change in England in the course of a few years. . . . I must differ from you that there is no more liberty among the people of America than there is in England."

John Francis Bray had returned from York to Leeds at the end of 1837; and at the end of 1838 had commenced the publication of *Labour's Wrongs and Labour's Remedy* in weekly numbers. The book was intended by its author to herald the great change referred to in the letter. Unfortunately for him, his enthusiasm received a severe check; for his book, published at his own expense, far from proving the gospel of the great change, was neglected by the workers and received, on the whole, an unfavourable press.

The *Yorkshireman* of February 2nd, 1839, contained the following comments :—"This volume is the production of an English mechanic; and we name this fact because we consider it to be an honour to the working men of this country; indication of the progress of mind and the elevation, moral and intellectual, of this class; Mr. Bray is well entitled to be heard in behalf of the working classes. He is himself a working man. He was, we have much satisfaction in recollecting, for a considerable time employed as a compositor in the *Yorkshireman* Office. We could not undertake to give an analysis of such a work without a more careful perusal than we have been able to bestow upon it. We have, however, seen enough to justify what we have said, as well as to discover that we do not agree upon all the topics on which he treats."

The *Leeds Times* of February 23rd, 1839, in the course of a long review, agrees that evils exist, but attacks the author's remedy :—. . . " Our readers will have no difficulty in perceiving that the remedy proposed is one at present the subject of considerable discussion, and said to be gaining ground more especially among the working classes. We should be wilfully deceiving them did we hesitate to say that we conceive it to be the furthest possible from effecting the object in view, and to use the words we have already quoted, both ' visionary ' and ' impracticable '. Compared with the remedy here proposed as the infallible cure for all human evils, the Universal Suffrage panacea of the Chartists shrinks into moderation and insignificance. . . . Questions before which the loftiest minds have bowed down in despair of solution, he settles by one ' sweep ' ; points which to the mighty intellects of all times have appeared dark and undefined, are considered as the easiest and most simple. . . . The work gives marks of a mind in earnest with its subject and is written in some parts with considerable power, rising often into eloquence."

The *Spectator* of Saturday, March 16th, 1839, after mentioning some points from the book, continues :—" It is unnecessary to go further into the matter of this writer, or to discuss with him what he calls his ' first principles ' ; if unable to detect the why of his errors, no reader of the *Spectator* is liable to be misled by them ; and even if we could reach those likely to become his disciples, and could spare the time to expose his fallacies at length. it is to be apprehended that many of them have hearts so hardened by long-continued poverty, ignorance and the neglect of those above them, that they would be deaf to instruction. In manner Mr. Bray is clear, strong and forcible, but wordy ; his acquirements extend to some reading in history and political economy, and he is so far moderate that he recommends inquiry into his system before action."

Even Bray, in his most optimistic moments, could scarcely have expected favourable reviews from newspapers with a strong Tory bias. What probably galled him most was the faint praise which he received from those papers which were largely read by the workers. That they were unanimously sceptical of the feasibility of his plan for the regeneration of Society, will be seen from the extracts given below :—

The *New Moral World*, Birmingham, reviewed the book in three issues, giving numerous quotations. Included in the issue of the 27th April, 1839, was the following comment upon Chapter I, in which Bray dealt with "The Wrongs of Man and their Origin" :—"'What then is the secret enemy that devours them?' The answer to this question has never, perhaps, been more clearly given than by the author of the little book before us." On May 4th, 1839, after quoting from Chapter III, which deals with the conditions requisite for individual and national prosperity, the reviewer added :—"How beautiful, clear and intelligible. Here is no strange, deep, or apparently revolting doctrine, to be examined by persons whose mental cultivation has been but ill attended to. It is a position which the 'intelligent artizan' can comprehend. . . . We differ in some degree from Mr. Bray as to the *mode* of carrying out the remedy." In his concluding comments on May 6th, 1839, Mr. W. Hawkes Smith writes : "The work of Mr. Bray, as I have said, is marked by deep research and clear-sighted deductions." He praises Bray's approach to Socialism, in contrast to the proceedings of those who attack religion and its institutions. "Perusing with attention the pages of this little work, and then turning to the conduct of our accredited missionaries and lecturers, I am painfully impressed with the contemplation of Socialism as it is, compared with what it might have been had the practical ideas of Mr. Bray swayed the minds of its leaders."

The *Chartist* of May 18th, 1839, contained the following :—"This work contains a strenuous and able argument in favour of a reconstruction of society, on the bases of equal labour and equal enjoyment for all its members. Of the perfect practicability of this scheme, disinterested persons, despite their wishes, may have many doubts ; but all must be pleased with the ardour, benevolence, and ability displayed by the present writer and listen to him with a wish to be converted—certainly with a conviction that much may and ought to be done to lessen the monstrous inequality that now prevails."

On September 7th, 1839, the *Northern Star* printed a review which included:—. . . "But though we think the majority of our readers will allow that Mr. Bray has by no means overrated the wrongs of labour, so far at least as his ideas are here presented, yet we hold that comparatively few of them will be inclined to agree with him in the remedy he proposes."

The *Sheffield Iris* of December 24th, 1839, reviewed the book at some length, adding:—"This work is the production of a journeyman printer and contains a mass of well-digested facts, sound tenable argument, and important practical deductions. . . . The length to which this notice has extended prevents us from following the author through his well-connected and deeply impressive data, or of noticing the remedies by which he purposes to effect the cure, from some of which we certainly dissent; but we recommend the work to the notice of our readers as one from which much useful information is to be derived and a correct idea formed of the present condition of the labouring population. We would also compliment the author upon the purity of his style and the powers of mind which he displays in every page."

Two articles on *Labour's Wrongs and Labour's Remedy* appeared in *Cleeves Penny Gazette* on May 2nd and May 14th, 1840. They contain no criticism; but recommend the book to their readers on the grounds that, "in addition to its uniting the rare qualities of eloquence *and* argument, it is couched in a fine spirit of honest enthusiasm, that, more than all, carries the reader pleasantly throughout the work." Even this meed of praise is rendered suspect, since the publishers were the London agents of the book.

There is no trace in any of these reviews of anyone accusing Bray of being Utopian; though he has given this as his excuse for writing a sequel to his first book. Of *Labour's Wrongs* he wrote:—"Of course it was an unpopular work, as it attacked too many interests adverse to labour." This fact should, however, have tended to make it popular with the workers for whose benefit it had been written. "Having nothing now to occupy his mind" (and apparently being nettled by the failure of his verbal crusade) "he wrote a sarcastic work entitled *A Voyage from Utopia to Several Unknown Regions of the World*[1]; but never published it or re-wrote it." He thus retained the favourable opinion of W. Hawkes Smith, of the *New Moral World*, which his venomous attack on religion in this latter work would have caused him to forfeit.

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[1] It is hoped later to publish a detailed criticism of this and other little known works of Bray.

The *Voyage from Utopia*, in which Bray, in the guise of a Utopian, adversely criticised the social and political institutions of Britain, France and the United States, may be held to reveal the real Bray to a far greater extent than *Labour's Wrongs*. The manuscript contains the following note :—" Feb., 1873 : This was written in England between 1840 and 1841, as I left early in 1842. Here I am in Michigan ! 1873 ! As the critics thought I was Utopian, I wrote this to show what existed outside Utopia." This imaginary reason is not sufficient excuse for what was largely a repetition of previous arguments, thrown together without any ordered arrangement. Bray was, undoubtedly, bitterly disappointed to discover that the workers had no inclination to submit themselves to social experiments ; and he had lost faith in the willingness of capitalists to devote their wealth to the foundation of ideal communities.

In 1840 he commenced to study French under an educated man who had been expelled from France by Louis Philippe, and he progressed sufficiently to read and understand the written language, " although his master erred in not teaching him to speak it, the most important part ". Amongst the papers in Bray's box was his French exercise book, which remained only half-full of exercises in translation from French into English. It is reasonable to suppose that this was the extent of his study in the language, except that he had partly read two books which he purchased during his visit to Paris.[1]

There was, at this time, a considerable amount of unemployment in the printing trade. This, coupled with the failure of his book, made him turn his thoughts to America. In 1841 and 1842 we find him enquiring from his brother as to the rates of pay for compositors, the conditions of work and the state of Trade Unionism in the United States. He told his brother that the publication of *Labour's Wrongs* had cost him £70 ; and that he had recovered little of his outlay. He was despondent ; and spoke of his path through the world as a thorny one ; there was little worth

[1] These were *Paroles d'un Croyant*, by Lammenais, and A. Boyer's *De l'Etat des Ouvriers et de son Amélioration par l'Organisation du Travail.*

living for. Man was born only "to strut his brief hour on the stage of human life". His health also had, for some time, caused him anxiety, and he hoped that the voyage to America would benefit him. On learning of his brother's firm intention to proceed to America, Charles, who was evidently anxious lest those revolutionary principles which John Francis had expressed in his book should be the cause of trouble, gave him wise advice as to his future conduct. In his last letter from America to his brother, Charles wrote: "Boston, February 1st, 1842. From your last letter we are led to expect you during the coming summer."

In the Spring of 1842 Bray had definitely made up his mind to return to the United States; but before doing so he visited France for a few weeks and fell in love with Paris, which he preferred to London or any other city he had known. He sailed for Boston at the end of May; and after a voyage of six weeks arrived in time to spend another Fourth of July after an absence of twenty years. "He obtained a week's work in an impecunious Democratic paper, which failed at the end of the week, leaving his wages unpaid. The politician who ran the concern was afterwards rewarded with the collectorship of Boston!" His second situation was with a Whig election paper, which failed in a few months without paying wages; but he had grown wise with experience, and had left before the catastrophe took place.

"It was a common custom at that time to start business on very little capital, and the wage-workers were put off every week with a portion only of their wages. If the business prospered they were ultimately paid; if it failed, they lost all that was due to them. This was a miserable contrast to the English system of paying wages in full every week, under all circumstances. The Yankee appeared more like a gambler and sharper than an honest business man."

Under such uncertain conditions of wage-work, Bray made up his mind to migrate to the West, where he hoped that the air and manual labour on a backwoods farm would give his health a chance to recuperate. He was, too, in search of leisure in which to write another book which he had in contemplation. Accompanied by a brother, he took a farm of forty acres in Lapeer County, Michigan. The farm, which he bought with his savings, about seven hundred dollars, included a comfortable log house and a small clearing.

The brothers managed without female help for fifteen months, when becoming tired of domestic drudgery, Bray decided to marry. After a courtship lasting six weeks, during which he saw his intended wife only twice a week, and only once by daylight, he married this cabinet-maker's daughter from Lapeer in 1844. He happened to secure a good wife; and "they lived pleasantly together until 1876, when she died of consumption. They had six children, only one of whom survived beyond childhood."

Bray soon discovered that a backwoodsman had little leisure for mental work; and his wife was evidently homesick. So, in the New Year of 1848, he removed to Pontiac, the home of his wife's relatives. Here he took charge of a paper called *The Jacksonian* on February 1st, intending to stay for a year, but eventually continued in the same post till the spring of 1851. Then, the farming urge returning with full vigour, he removed to a pleasant farm near Pontiac. In this place frequent attacks of ague made it almost impossible for him to work; and his eldest boy died from croup at the age of six years. Leaving the farm, he returned to Pontiac, and later removed to Detroit, working in both places as a compositor until 1856. In this year he once more set up an establishment in Pontiac. His new venture was the purchase of a daguerreotype gallery, which he apparently ran with some success till it was burned down in December, 1865.

As his health had suffered from the close confinement of the gallery, he removed to a small farm of six acres near Pontiac; and here he lived out his life, cultivating fruit trees, with the assistance of his son, who also worked as a harness-maker in the village. The place was too small to support a family, especially when fruit from the Southern States began to compete successfully with local produce.

"His son married in 1880, after the two men had kept bachelor's hall since November, 1876, the father doing all the house work. They all lived together on the farm till 1887, when the son's wife died of consumption, leaving two little girls aged five and three years respectively. His wife was a pleasant companion, and her death a great loss to both father and son, as it brought the 'old man' once more to the cook-stove and dish-water. And he has had the main care of the children up to this date, January, 1890, altho' suffering greatly during the last two years from catarrhal consumption, which kept him on the premises."

It was while he was occupied in the photographic business that Bray wrote *American Destiny: What Shall it be, Republican or Cossack?* This is a tract of forty-four pages of which very few copies survive. It was published in New York for the Columbian Association in 1864, in an anonymous edition limited to nine hundred copies. The printer's receipt was found with Bray's papers. The pamphlet defends the right of the Southern States to secede from the Union, on the ground that "As States are composed of individuals, so the divine right of States to self-government rests upon the equally divine right of individuals." As he writes in the *Short Sketch*, he "could not resist writing and publishing a pamphlet—in which he defended the right of secession, as the corner-stone of a true republic; and denounced the War as a violation of all the principles of American government. But few of these pamphlets came into circulation owing to the vigilance of 'the authorities'."

In 1877 Bray was invited by the American Labor Reform League to attend its seventh annual convention, to be held in May. He replied that he regretted that he was unable to accept their invitation. In the same year the Detroit *Socialist* began publication, and, through his letters to this paper, Bray became acquainted with some of the chief socialists of Detroit, including Frank Hirth, the editor, Judson Grenell and Joe Labadie. The year 1877 was the culmination of a long period of industrial depression in the United States; unemployment and vagrancy assumed alarming proportions; and the general unrest led to clashes between workers and police. The reports of oppression and victimisation moved Bray to take up his pen again in order to sketch out a plan for the reconstruction of society.

So, in the winter of 1878, he wrote *God and Man a Unity*, but was unable to get it published owing to lack of funds. This little tract of ninety-six 12mo pages purported to be a new revelation, adapted to humanity everywhere. It contained a religious creed and a social organisation based upon its principles. The former was theistic and the latter included co-partnership between capital and labour, as a modification of previous schemes of social reform. After it was re-written, in 1879, it was published under the auspices of the Detroit Socialist Tract Association by Judson Grenell. It is rather pathetic to read that Bray's son's savings were dissipated in defraying most of the expenses of publication. In Bray's log book, under the date October 18th, 1879, appears the following: "Went to Detroit on a visit to Grenell: had sent him the MS. of my book some time previously; and found it printed and in the bindery. . . . Brought home six copies. . . . So have sent into the world two (three with *American Destiny*) books to aid in the progress of the race." Later in the same year we read: "Up to the end of the year sold but four, and not one paper noticed or reviewed it."

All Bray's publishers failed and went out of business, two of them owing for books; "so it was impossible to circulate them except by giving them away, which he did to the liberal writers he heard of through labor papers." The Socialist Labor Party of Detroit, an active body under whose auspices was the Socialist Tract Association, of which Judson Grenell was secretary, invited Bray to go to Detroit on July 4th, 1879, in order to address an "Eight-Hour Demonstration". It may be surmised that up to this time he had not met the chief Detroit socialists, though he had corresponded with them; and had assisted them in the production of their tracts. The Chicago *Socialist*, in its first number, dated May 10th, 1879, said of the tracts that they had been written by the author of *The Coming Revolution*, the editor of the *Socialist*, Comrade J. F. Bray, W. H. G. Smart and others. Since, however, the authors' names were not mentioned on the several publications, and Bray makes no specific reference to his part in them, it is impossible to discover his precise share in the work.

In reporting the Demonstration, the Chicago *Socialist* wrote:—"Detroit: Comrade J. F. Bray, of Pontiac, made the English speech of the day. Long knowing him by his writings and deferring to his opinion as to none other, it was with no common feeling that the socialists of Detroit greeted this veteran in Labor's army. Mr. Bray talks as he writes—every sentence to the point, and every point clearly defined. His speech did not deal specially with the eight-hour questions, but with the Labor problems in general."

The Trades, of Philadelphia, reported the meeting in its thirteenth issue, dated July 12th, 1879: "The Demonstration—Labor's Uprising—Accounts from all parts—Eight-Hour Demonstration in Detroit:— . . . The Demonstration was under the auspices of the Socialist Labor Party and the committee of arrangements was fortunate in securing an English speaker, J. F. Bray, of Pontiac, Michigan, a veteran in the ranks of those battling for Labor against the encroachments of Capital. Mr. Bray is over seventy years old; but his erect figure and firm step deceives one into thinking that three-score years have not been reached. The speech of Mr. Bray was a powerful argument in favour of the new school of industrial science—Socialism—showing in his characteristically lucid style that while eight hours is ameliorative, Socialism strikes at the root of the disease; so that it would not be necessary to work more than six hours a day. As more machines were invented the hours could be reduced perhaps to five or even four."

It is a significant fact that from the date of the Demonstration the sale of the tracts increased to an enormous extent. Over 140,000 were sold before the end of the year.

The brother who went with Bray to Lapeer died near Boston in 1862, while another brother died in 1883—"A most excellent brother, who had helped him and the others liberally, whenever they needed it." The rest of Bray's history and his valedictory message are best given in the words of the *Brief Sketch*. "*Labour's Wrongs*, published in Leeds, 1839; *American Destiny*, printed in Pontiac in 1864; *God and Man a Unity*, printed in Detroit, 1879, besides writing for various reform papers for several years, have kept him busy. And now, pushed beyond eighty, it is only occasionally that the war spirit moves him to attack wrongs and frauds; and the vehicles of attack are few."

"And what is his reward for all this Labor? In money, a loss of perhaps 300 dollars. In mental growth and satisfaction it is worth much more than the cost. He can see now that his tramping experiences were just what he needed to break through the crust of his early prejudices and ideas, and show him the world as it is and as it ought to be. He feels satisfied that he has lived for a purpose—not doing half that he wished, but making a track for others to follow. There are so many interruptions of all kinds in the life of a working man, just above poverty, that it is not surprising that there is so little progress."

" Bray always despised office speakers (seekers ?) and never attended caucuses or conventions, so never received nominations for office or worried over elections. His thoughts were given to reforms and a state of society such as politicians could not grasp. He cared nothing for the questions or the popularity of to-day, except as they affected the future. Of a pacific disposition and careless of trifles, he never sued anyone nor was sued. With him, one lawyer would have starved in a whole state."

It must be noted here that the publication, in 1855, of *The Coming Age*, which is not mentioned in the *Brief Sketch*, is an exception to Bray's principles ; for it was undoubtedly written when spiritualism was a popular subject of discussion in the United States. In after years he said that fortunately he did not manage to get the third number of the series published ; fortunately, that is, because popular interest in the subject rapidly waned. This was his only attempt to publish a " best-seller ".

Continuing quotation from the *Brief Sketch* :—" In 1890 his son married again to an excellent girl, much his junior, and a son was born in June, 1891 ; but was feeble and sickly, as the mother was one of those women who altho' strong and apparently healthy themselves, cannot raise robust children."

" And now, in the fall of 1891, with two sick children, a long drought and poor crops, he helps as he can in the house, suffering much from cough, arising from his lung complaint. His mind has, so far, not been affected, but he writes for no papers, as he sees none ; and trusts to faith for the growth of the labor cause, in spite of the inefficiency or treachery of leaders connected with the trades unions and other organisations. He works in the garden whenever able and longs for a quiet opportunity to finish what he had written for a supplement. For it is impossible to think or write amid the prattle of children and the disturbance of the housewife. And that leisure seems impossible again, as in 1878–'9. So he has to remain dumb and quietly await the ending of his career."

" Bray has never had what may be called a friend or associate in Pontiac. There are not a dozen people who know he has ever written anything in the labor cause. He has quietly pursued his work, never hoping or expecting any reward, but the consciousness of doing his duty to mankind. The family are compelled to live in a very moderate and inexpensive way, as the seven dollars fifty cents per week earned by his son in the harness shop, with outside help from the sale of fruit, will not allow the saving of a dollar ; so they may be said to live from hand to mouth as reformers have always done. A rich reformer is an impossibility. He longs for leisure to amend his last work, *God and Man*, by changes in our political system. He would abolish the Senate, and reduce the representatives to two from each state, with no power to pass laws until they had been discussed and endorsed by the people."

" A weekly paper devoted to the consideration and discussion of political and industrial reforms should be published by the federal government and distributed gratis to all the states, so that everyone should have the opportunity of becoming acquainted with every change contemplated. It should be a free paper, and free for the discussion of every measure by rich and poor. The same changes should take place in all the states, thus cutting off a multitude of useless laws and saving the public money. Other changes in government would naturally occur as the people grew into new conditions of life. An industrial republic must be the foundation for a political one. A universal partnership between labor and capital on truly equitable conditions must be the basis for society. Without this our present republic, like the others, will soon give place to a military plutocratic despotism. The foundation for this is being laid in pensions and in ' coast defences ', rendering an increase of military necessary. The democratic and republican parties are merely wings of plutocracy, to assist it as long as possible under separate organisations, but ready to coalesce as soon as the last struggle commences. They are both rich men's parties, and the enemies of the wage-workers."

" There can be no more finality in a form of government than in anything else. The federal government was spoiled by the tories from the very beginning. It was built on the English aristocratic system of class rule. And we have always been ruled by a special class, removed from the wages class, and having no interest in common with them. When the masses grasp the fundamental principle that labor and capital must come into equitable partnership, they will elect their own representative. But now, ignorant of this great basic principle, they wallow in the mire of partizanship, and assist in bleeding themselves to death through low wages, and the election of a government that has no more mercy on them than their employers have. Industrial justice is a thing unknown alike to rich and poor, governments or the governed."

In contradiction of his assertion that he was almost unknown in Pontiac and of his statement that he took no part in labour organisations, his connection with a movement called the " Knights of Labor " is worthy of notice. Judson Grenell wrote to him in January, 1883, suggesting that he should go to Detroit to meet the " Knights " and be initiated. From his membership card it appears that he was initiated in May, 1886, and paid his dues till December of that year. The Detroit *Labor Leaf* of June 30th, 1886, reprinted the following report from the *Detroit Evening News* :—" A few weeks ago an assembly of the Knights of Labor was founded in Pontiac by Henry L. Schulte, this city ; and Mr. Schulte, in honor of the work Mr. Bray had done and is still doing in the labor cause, called it the ' John F. Bray Assembly ' ! "

Notwithstanding his great age and growing infirmities, Bray continued to write articles to the labour press until his eighty-first year. Some of these both in print and in MS. were found amongst his other papers. They were often the ideas he had utilised in his books, re-dressed for the occasion. He was never tired of jotting down his ideas upon any piece of paper which came to his hand, sometimes making use of a piece of notepaper which had already served its purpose once. His daughter-in-law describes how he would suddenly be seized with an idea whilst working in his orchard, and would rush into the house to put it upon paper, whilst the rest of the household crept about silently until the labour of composition was completed. In 1889 R. S. Simpson, the publisher of the *Canadian Labor Reformer*, wrote to Bray : " We had no intention of considering you a paying subscriber to the paper, as your communications were worth many times the cost of the papers you received. . . . If at any time you feel disposed to do so, we shall be pleased to receive contributions from your pen ; but can hardly expect frequent favors in this regard owing to your advanced age."

In spite of his catarrhal consumption, Bray lived to the great age of eighty-seven years and seven months, dying on February 1st, 1897. His son, Frederick Mayo Bray, died on January 1st, 1918, at the age of 67 years, leaving a widow, Anna Holtz Bray, who is still living on the small farm at Pontiac, Michigan.

As a pendant to this record of Bray's life we give an account of an interview granted by him to a reporter of the *Detroit News*, printed in the issue of Saturday, June 27th, 1885, and reproduced in the weekly edition called the *Detroit Echo*, on July 1st, 1885. The report suggests to the reader that Bray was not quite so retiring nor so unknown as he had professed in the *Short Sketch*, which was written some years later.

"The Impending Crisis.

"Views of Veteran Socialist, John F. Bray.

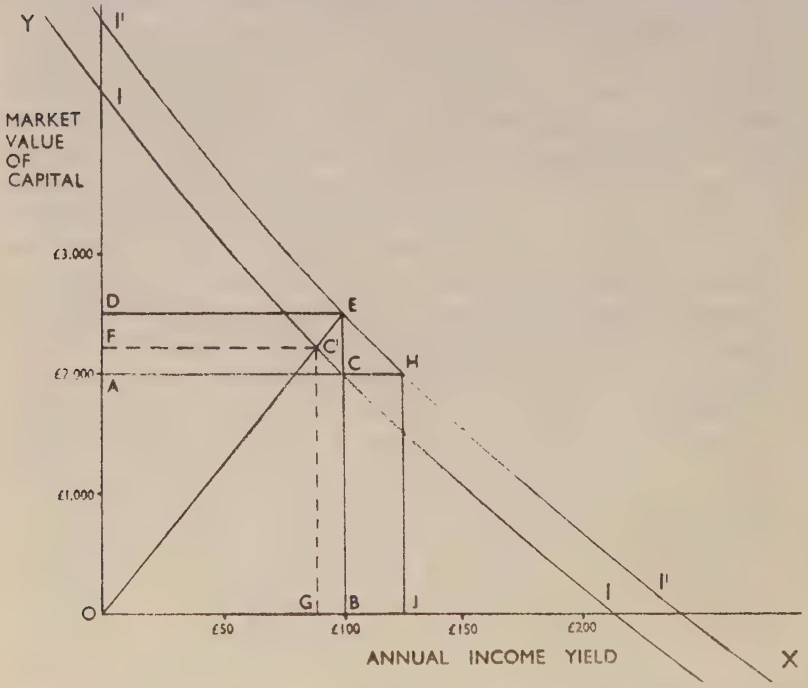
"One of the most prolific writers on the labor question from the labor standpoint is John F. Bray, of Pontiac. *The Irish World*, *Denver Labour Inquirer*, *Hartford* (*Conn.*) *Examiner* and *John Swinton's Paper* almost weekly contain letters from him; and, when they were living, *The Detroit Socialist*, *Spectator* and *Unionist*, respectively. *The San Francisco Truth*, the *Chicago and Cincinnati Socialists*, *The Milwaukee Emancipator* and other radical publications that have been allowed to perish teemed with short articles denouncing the present industrial system. . . .

"When the Socialist Tract Association of Detroit was in existence, Mr. Bray wrote for it several tracts. Many thousand copies of these were printed. In 1879 Mr. Bray made a Fourth of July address at a socialist picnic in Arbeiter Hall. In the national green-back labor convention in Chicago in June, 1880, at which forty-four socialist delegates were admitted, had they been allowed to vote for a nominee for President, they would have voted solidly for John F. Bray, who is thought to be the oldest living socialist born in the U.S."

Capital Value and Income

By F. W. Paish

It would appear that the approach to the question of how far a change in the capital value of an asset without a change in the income derived therefrom improves the financial position of the owner could be appreciably simplified by the use of the following technique.



In the foregoing diagram, an investment with a market value equal to *OA* gives an annual income equal to *OB* The point *C*, where the perpendiculars from *A* and *B* meet, indicates the value to the owner of the combination of capital value and income yield.

Through *C* construct an indifference curve (*I I*), between capital value (yielding no income) and annual income (having no marketable value).

If the owner is completely indifferent to the annual income, and is concerned only with capital value, *I I* will be parallel to the *X* axis.

If he is concerned only with the annual income, then it will lie parallel to the *Y* axis. It is unlikely that either of these limiting cases would in fact occur. A very large capital sum will finance a substantial annual expenditure for a long time, and would therefore be preferred to a small perpetual income even by the most conservative of rentiers. Conversely, it is unlikely that even an extremely short-term speculator would fail to feel recompensed for the loss of £100 of capital value by an increase in income of £100 per week. It is therefore highly probable that the indifference curve will slope downwards and to the right and that it will cut both axes.

Now let the percentage rate of interest fall from $\frac{100\ OB}{OA}$ to $\frac{100\ OB}{OD}$ The capital value of the security therefore rises to *OD*,=*BE* Through *E* draw a second indifference curve, *I′I′*, lying above and to the right of *I I* From *E* draw a line to the origin.

If the owner of the security sells a part of it and consumes the proceeds, he will reduce both the capital value of his asset and his annual income, and his position will move along the line *OE* in the direction of *O*. If he stops at *C′*, where *OE* cuts *I I*, his position will be exactly as favourable as before the fall in interest occurred. But at this point he has spent less than the amount of the rise in the capital value of his asset, since some increase (*AF*) in capital value is needed to offset the fall (*GB*) in annual income. His true profit from the rise in capital value is therefore not *AD* but *FD*, since *FD* is the additional amount which he can spend without making himself worse off than he was originally.

From the foregoing analysis it is clear that a distinction requires to be drawn between a capital gain due to the capitalisation of an increased income at an unchanged rate of interest, and that due to the capitalisation of an unchanged income at a reduced rate of interest. In the former case the whole of the capital gain can be spent without making the position worse than it was originally, in the latter only a part of it.

On the same diagram can be shown how much in terms of annual income the service of the availability[1] of the additional capital value is worth to its owner. If *AC* is extended to cut *I′I′* at *H*, then *CH* (=*BJ*) is the annual income equivalent of the rise in capital value. This does not of course mean that the owner can spend this additional amount per annum and still maintain his income at the new level. His position is similar to that of someone who receives the gift of a durable consumption good, from which he receives direct services by reason of which he is better off. If he now spends part of his capital and so reduces his money income, he will gradually return to another point on his original indifference curve, having a smaller money income but enjoying more direct services.

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[1] *See* W. H. Hutt, *The Theory of Idle Resources*, pp. 63–64.

It can similarly be shown that if a man wishes to restore his financial position after a decline in the market value of his capital owing to a rise in the rate of interest, he must save until he has restored a part, but not the whole, of his capital loss. He will then still receive a smaller direct service from the availability of his capital, but will receive compensation for this in the form of a larger annual income. If, however, he wishes to restore his position after a decline in capital value due to a fall in the income yield, interest rates being unchanged, he must save until he has restored the whole of the former capital value.

The effect of changes in income yield, without a change in capital value (as for instance in consequence of a fall in interest rates accompanied by a conversion operation), can be similarly ascertained. If the yield of an investment falls, while its capital value is maintained, its owner, to restore his former position, must save enough to replace part, but not the whole, of his lost income. If the yield rises, without a rise in capital value, he will be no worse off than before the rise in yield if he spends a part of his capital, provided that he leaves his income still sufficiently above its former level to compensate him for the reduced market value of his capital.

Finally, this approach provides a convenient definition of the phrase ‘ maintaining capital intact ’, at least where the capital of an individual is concerned. Clearly, an individual owner of a security or other asset has maintained his capital intact if he is indifferent between his present combination of capital value and income yield and a former combination, *i.e.* if he is anywhere on the same indifference curve. Definitions of the phrase to mean the maintenance either of market value only or of annual income only can now be seen to be true only in the limiting cases where the indifference curve is parallel to one or other of the axes. Where, however, a corporation is concerned, its application is less obvious, since the indifference curves of the various shareholders may show great dissimilarities. It may therefore well be that movements in opposite directions of the market value of the securities and their yield will cause some shareholders to feel better off and others worse.

Economic Institutions and the New Socialism

By W. H. Hutt

Within the last three years, three major works on the economics of socialism have appeared. Two of these, that by Dr. H. D. Dickinson and that by Professors O. Lange and F. M. Taylor, have already been discussed at length by Professor F. A. v. Hayek in this *Journal.*[1] The present article attempts to discuss some of the important questions raised in the third and most recent, namely, that by Mr. E. F. M. Durbin, entitled *The Politics of Democratic Socialism.*[2] Most of Professor Hayek's remarks are as relevant to Mr. Durbin's book as to those with which his article specifically dealt. But owing to a difference of tone and approach in the last of the trilogy (a difference aptly suggested by the title) a number of separate issues call for examination.

All three works have one basic point in common. Although written by those who are proud or anxious to call themselves 'socialists', they all accept—with certain reservations—what may be called the orthodox economists' diagnosis of the evils of modern society. They accept also (explicitly or implicitly) the ideal of a society in which values are competitive.[3] This constitutes one of the most remarkable and significant features of the intellectual history of this era. It is a consequence, as Professor Hayek has pointed out, of the challenge of Pierson, Mises and their successors to the socialists of former decades. But the new socialists differ from the orthodox economists over the methods of attaining the agreed ideal.[4] They believe that the institutions required must resemble, outwardly at least, those of traditional socialism, whilst the end which such institutions are to serve is that of a perfectly competitive regime. Thus, Mr. Durbin, whilst admitting the general validity of the orthodox diagnosis, repeatedly assures us, with what sometimes seems to be a gesture of defiance, that the orthodox economists' remedy must be rejected. Society having gone so far along mistaken paths, it is folly to try to turn back. It is especially foolish, he thinks, to attempt to persuade a democratic society of the beneficence of a reversal of policies. And he believes passionately in the desirability of democracy.[1] It is of the greatest importance, when policies of post-war reconstruction may at any moment come into discussion, that these grounds for preferring ' competitive socialism ' to ' competitive capitalism ' shall be carefully considered.

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[1] May, 1940.

[2] Routledge, 1940, 384 pp., 7s. 6d.

[3] The extent to which this is so is disguised or softened in Mr. Durbin's case by his use of ambiguous terms like 'capitalism' or '*laissez-faire*'. Thus, the *laissez-faire* which he attacks is a regime which the orthodox apologists for *laissez-faire* attack on identical grounds.

[4] They do *not* reject orthodox *economic theory*. They reject the policy-suggestions of modern critics of society like Professors Robbins and Hayek, whose teachings respecting policy lie in the traditions of the classical economists.

Let us first notice Mr. Durbin's diagnosis of the failings of the contemporary economic system. The reactions of an ignorant and irrational electorate to insecurity and inequality, far from bringing security and equality, have largely frustrated the beneficent expansiveness of capitalism.[2] In consequence, he tells us, " freedom of enterprise is rapidly ceasing to exist. Whatever party is in power, the area of the economy brought, whether for good or for ill, within the supervision and control of the State is steadily and relentlessly increased. Freedom of enterprise is not only withering spontaneously away, but it is also being deliberately, consciously and carefully destroyed amid popular acclamation. In its place is appearing an ever-thickening jungle of unco-ordinated government control, whose main purpose is restriction, and whose chief fruit is the substitution of monopoly for competition " (pp. 135–6). This might have been a prophetic passage from Yves Guyot or an excerpt from the writings of Mises.

The developments brought about under the present system are vividly summarised. " Whatever the name of the government in power and whatever its theoretical principles may be, the central control of industry, trade and finance is everywhere extending at an amazing rate . . . The business of enlarging the economic powers and functions of the State is ceaselessly pressed forward . . . If one surveys what has happened in the last ten or fifteen years, the growth of the economic activities of the central government is extraordinary . . . The slow, steady and relentless extension of government and legislative control will, at its present pace, bring within a generation the greater part of industry and finance within the organised sector of the national economy " (pp. 96–8). " It is *called* ' planning,' " he says. " It actually consists in the substitution of monopoly control for competition in all the markets and industries that it touches . . . The power of the State is used not to oppose and limit monopoly but to create it. We move at a bewildering pace into a regime of State organised monopoly " (p. 100). Labour groups as well as groups of property owners *seem* to benefit from such restrictions, but both groups in fact gain at the expense of the community. " Industries live by strangling each other. Benefits are gained for a section by starving, not feeding, the whole of society . . . It is a process of slow, suicidal, sectional restrictionism "[1] (p. 101).

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[1] A large part of the book is devoted to an account of the horrors of the Nazi and Soviet regimes.

[2] It is a weakness of Mr. Durbin's treatment that he does not show specifically that insecurity and inequality are to a large extent an actual product of policies which have attempted to get rid of them.

But it is not only State control and State-protected capitalist monopoly which have frustrated the effectiveness of the present system. Mr. Durbin appears to consider that trade unionism is the chief villain of the piece.[2] He says that " one essential omnipresent market " among the institutions of capitalism 'is jammed and rigid ". " It would be as sensible to expect an internal combustion engine to work smoothly with an immovable distributor, as to expect an economy based on private enterprise to work properly when one essential part of its self-adjusting mechanism cannot move at all . . . And the evil consequences of wage rigidity (for the capitalist economy) are by no means fully revealed in the accentuation of unemployment. Maldistribution of labour between employments, and the failure to utilise certain types of capital, still further reduce the national income " (p. 91).

On the question of the huge growth of expenditure on the social services during this century, Mr. Durbin's attitude is not quite clear. He certainly does not think of these services as an appropriate and genuine response to the community's collective requirements. He regards them as, from one aspect, a response to demand for security ; although whether they have really brought security or a just distribution of it he does not discuss. Of their equalitarian effects, he appears to be sceptical. In some of his phrases he seems to regard taxation of the relatively well-to-do as having been so severe as to devitalise the goose that lays the golden egg (p. 300). In other parts he suggests that " we may not have come up to that level yet " (p. 299). At times he seems to regard the proceeds of taxation as having been squandered upon vote-catching projects ; at other times he apparently regards the social services as essential for security. He is, however, quite definite about the political popularity of these services. He says : " The main historical feature of these measures is the enthusiasm with which they have been received by the electorate, and the widespread support that they now enjoy from all classes in the community " (p. 293). The victory of the Left in these matters " has proved amazingly popular " (p. 293). But the reverse side of the picture is ominous and cannot be overlooked. " The process of taxation has already halved our Rate of Saving and reduced the collective saving of the rich to nothing. If it goes much further, the increase of taxation will wipe out social saving altogether, and leave us with a relatively stagnant economy " (pp. 293–4). " The continuous extension of the social services, and the steady rise in the proportion of the national income that is taken in taxation, imposes a strain upon the capitalist system that has already reduced its potential pace of development and will reduce it still further " (p. 299). Indeed, Mr. Durbin seems so apprehensive of the burden of taxation increasing that, under the sort of socialism which he wishes to introduce, " the people at large must be made to think about, and care for, something less immediate than better housing and family allowances " (p. 298).[1] Few politicians would have dared to speak so courageously as this ; but the *implications* of these passages are even more condemnatory. They clearly charge the State with squandering in vote-buying the proceeds of taxation which should have been devoted to saving. Unlike the individuals who were taxed, the Exchequer did not make a wise time-preference decision. The community's funds were badly allocated between present and future. Whilst the State should have been providing capital works or supplying the capital market it has been frittering funds away on politically conspicuous and popular projects.

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[1] The word 'suicidal' is an inadvertent exaggeration. In spite of the stupidities of the existing system, it is still progressive and (as a system) stable, as Mr. Durbin himself strongly emphasises in passages quoted below.

[2] Mr. Durbin regards trade unionism partly as an expression of 'acquisitiveness' and partly as a response to the demand for security. But it is doubtful whether he believes that it has actually *produced* security for the working classes as a whole.

Until ' capitalism ' was shackled by increasing State control and monopoly it was, Mr. Durbin points out, powerfully expansive. In one hundred years there was " something like a 1600 per cent. increase in the physical production and consumption of wage goods alone " (p. 84). " Total real wages increased by approximately 100 per cent. in the second half of the nineteenth century " (p. 85). And even with the handicap of the shackles which have been increasingly burdensome since the last Great War, the essential progressiveness of the capitalist system has not been destroyed. Professor Colin Clark's figures are quoted to show that real income per head of the British population rose between 1924 and 1936 in the proportion of 185:221.8 (p. 140) ; and that real wages (unemployment allowed for) rose over the same period in the proportion of 184:202 (p. 142). " The power of the capitalist system to raise the level of consumption—to increase the production and consumption of consumption goods—has not wholly passed away. We live in a period of rapid expansion " (p. 142). " The rise in the standard of living is rapid. It is impossible to escape the conclusion that great strength and consequent stability remain in capitalism, even in its State controlled and monopolised form. In so far as expansion is a ground for social stability, monopoly capitalism continues to possess it . . . It may not be pleasant to face these conclusions, but they must be faced " (pp. 143–4).

Moreover, the British working classes are, he argues, rapidly becoming small property owners, not in the sense of holding property as an important source of income, but as a reserve, especially against illness and death. Indeed, the growth of small property is a remarkable phenomenon of 20th Century capitalism (p. 113). This growth has been " out of all proportion to the growth of the population ". There is an *accelerating rate of growth* (p. 117). Even between 1930 and 1935, " during a half-decade containing one of the greatest depressions ever recorded in our business history, the proportion of the adult population covered by the institution of small property was increased by something like one-twentieth, and the average value of all the small reserves was increased by one-fifth ! " (p. 118). The relatively poor are, in fact, " now providing a third of the savings, and if their rate of saving is increasing at an accelerating rate, it is certain that the distribution of property will tend to become, slowly no doubt, but nevertheless surely, more equal " (p. 119). And on the basis of this far-reaching redistribution of income, Mr. Durbin suspects that research would disclose " the acquisition of other and not unimportant habits that were once regarded as typically and exclusively middle class " (p. 120). " The society in which we live," he concludes, " is an increasingly bourgeois society. That is an inescapable fact, whether we like it or not . . ." Indeed, " the proletariat of the Marxist textbook is rapidly disappearing " (p. 112). With what seems to be subtle irony, Mr. Durbin admits the *unpleasantness* of these hopeful facts. But he is thinking of those socialists who want modern capitalism to collapse from stagnation or increasing misery. Their misconceptions are, he feels, a danger to the success of the socialist cause. For a realistic political strategy, the powerful equalitarian and productive potentialties of existing capitalism must be faced, at any rate by the politicians themselves.

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[1] For political reasons the electorate must, of course, be pandered to. The rank and file of the Party organisation, " the main core of party intolerance and unwisdom and intransigence " (p. 289) must be appeased, for without them power could not be retained. They must be given the ' jam ' (*sic*) of social legislation. But the socialists must, nevertheless, " reduce their social service proposals to the minimum consistent with the retention of political power " (p. 298). The recognition of such issues sometimes makes the professional politician " appear hypocritical to those who bear no responsibility " (p. 290).

Why, then, does not Mr. Durbin advocate the removal of the shackles which he perceives to be keeping productive power in check ? The answer is chiefly that he thinks that such a course is politically impracticable. The accomplishments of the capitalist system have been limited by restraints imposed " directly from the political pressure and the democratic power of the common people . . . The right to form trade unions and the principle of collective bargaining is one of the earliest and one of the most strenuously defended democratic privileges . . . The right, once conceded, has been defended with obstinate pertinacity from every kind of attack. It would surely be unwise to deny the inherence of this demand in the nature of democracy and responsible government " (p. 358). This being so, do the advocates of restoring internal freedom of trade, he asks, really face the political implications of their policies ? " They must go to the people with these proposals upon their lips. Let us liquidate the trade unions ! " (p. 359).[1] Such a cry would invite certain failure. Economic liberalism can in fact only be achieved by persuading the people or through its being imposed against the will of the people. And it would be impossible to persuade them. " Freedom of enterprise seems incompatible with freedom," he suggests (p. 360); on these rather flimsy grounds putting forward the opposite thesis from that enunciated by Professor Hayek.[1]

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[1] Mr. Durbin has similar fears about attempts to get rid of over-taxation. How absurd it will be, he says, to go to the electorate crying : " We must reduce the social services ! Progressive taxes must go ! " (pp. 359–60). But who *has* seriously advocated the abolition of progressive taxation ? The real defect of the present system lies less in the height and incidence of taxation than in the use to which its proceeds have been put.

On this point about political expediency the whole of Mr. Durbin's principal argument appears to hinge. To consider it, three problems must be faced: firstly, the *sociological problem* of the manner in which (and especially the speed with which) institutional changes can be wisely advocated; secondly (and subsidiary to the first problem), the *political problem* of the shape in which the purpose of such changes will be clear and hence democratically acceptable; and thirdly, the *methodological problem* of the appropriate assumptions for realistic economic studies,—in this case, the problem of how far the economist should refrain from endeavouring to make clear the economic significance of those institutional changes which are inacceptable because they cannot be made comprehensible to electorates. Now Mr. Durbin appears to believe that orthodox economists are blind to the existence of the first two of these problems, or at least hopelessly naïve about them; and hence that their attitude respecting the third problem,—their choice of assumptions, dooms their efforts to impotence. But has he good grounds for this view? Would any reformers understanding orthodox analysis advocate going to the electorate and saying simply: " The trade unions must be liquidated! "? Have any reputable economists ever assumed that any long-established social institution could be rapidly uprooted without the danger of deplorable reactions? We feel that the prominent upholders of classical traditions to-day would agree that (in Great Britain) habits, customs, morals and aspirations have in countless ways become adjusted to the existence of trade unionism in its present form; that trade unionism has come to provide the only existing system of organisation which performs innumerable essential services for those in the industries which it covers; and that the organisation which it has built up would be a necessary institution for the carrying out of the practical reforms required in freeing the labour market. It may well be that the importance of these empirical principles has not been adequately realised or stressed. In any set of fundamental reforms, the existence of vested interests in the labour field would have to be frankly recognised; the privileged sections would have to be secured against drastic destruction of their income-rights; and the unions would have to remain in form and themselves supply the machinery required. Then, as in innumerable other fields of human progress, a new reality would emerge whilst the ancient show persisted.

The present writer has endeavoured elsewhere to enunciate general principles for reforms which seek to dissolve vested interests and to show their inherent practicability.[1] The principles cannot be stated here. It ought to be obvious, however, that the right to withhold labour capacity is not essential for the preservation of any system of distribution. It is true that no political party has yet attempted to work out the detailed institutional changes and methods of compensation required to produce a free labour market. But this is due to the real nature and significance of scarcity-creation not having been understood; and this in turn may be partly due to politicians having been constantly pre-occupied with immediate political strategy.

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[1] *Freedom and the Economic System.*

No one would question the assertion that to-day the working classes would bitterly resent any restraint of the right of collective bargaining. But their resentment would arise to a large extent because they have been almost unanimously *taught* for a couple of generations that trade unionism is an equalitarian institution which is essential for the protection of their interests. If Mr. Durbin can teach the dominant intellectuals in the socialist movement to see trade unionism as the obstructive agency which he recognises it to be, then it is not out of the question to suppose that they, *as trusted leaders*, could work effectively to change its whole nature. Admittedly, the educative or propagandist task is a huge one. The required campaign must be planned with a realistic regard for what we have learned from bitter experience about electors' psychology.[2] But if the end of the propaganda is consent for reform, the means must not be allowed to supplant the end. The mere winning of political power is likely to become the aim unless an ideal, conceived of in terms which are completely uninfluenced by electoral plausibility, consciously determines the whole effort. Whilst part of the objective may be temporarily sacrificed in order that a more important part may be gained, such a sacrifice is only defensible as an educative or tactical device leading to the ultimate end being nearer achievement. What is plausible in a programme is not a fixed and unalterable thing. The continuous compromise demanded by practical politics need never mean the sacrifice of ideals. And there is surely sufficient intelligence and idealism in the labour movement to make the fundamental reform of trade unionism a not unreasonable hope.

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[1] *Economists and the Public*, Ch. XXI, "Vested Interests and the Distributive Scheme". The following is quoted from the summary of the most relevant sections: "Orderly social reform postulates the absence of catastrophic dispossession of the owners of privileged rights. The vested interests—which are strong and confident of their innocence of anti-social motive—will successfully resist changes which seek to dissolve their income-rights. Hence they must be compensated during the transition. The payment of such compensation can be shown to be inherently practicable, and the ultimate dissolution of the burden demonstrated".

[2] The success of the trade union movement seems to have been largely due to the fact that it has enabled appeal to be made to what a remarkable recent study of the psychology of political propaganda describes as the most important and the second most important instincts of living beings: the instinct of struggle and the alimentary instinct (S. Chakotin, *The Rape of the Masses*). The instinct of struggle has been appealed to because the notion of the capitalist as an enemy has been present; the alimentary instinct, in which "everything is relevant that is concerned with economic advantages" (*Ibid.*, p. 19), is covered by that source of trade unionism which Mr. Durbin calls 'acquisitiveness'.

It seems to be the failure to recognise that compromise need not mean the abandonment of ideals which leads to that contempt for electorates, that fatalistic, almost defeatist attitude towards the educative possibilities of mankind which is so common among those who pride themselves on being " practical politicians ". Mr. Durbin does not say " that changes in the temper of a democratic electorate can never be induced by persuasion and reason " (p. 89), but he nevertheless belittles the power of *ideas*, as against admittedly irrational social forces. " Intellectuals, and particularly economists," exaggerate the importance of rational argument in the causation of political events (p. 360). " State organised private property monopoly capitalism " (as he graphically describes contemporary economic society) is " in a very special sense *inevitable*. It is inevitable in the sense that it could only be other than it was, if the emotional character and structure of values of common men and women had been different from what they were. The growth of rigidity, the growth of restriction, the decline of saving . . . could only have been prevented if the general reactions to insecurity, inequality and growing wealth had been different . . . Mere legislative changes and mere intellectual discoveries would not have been enough to change the course of economic history " (pp. 88–9). This fatalism contrasts sharply with the hopefulness of that great political realist, Graham Wallas, who regarded as an essential of socialism " the belief, based on the growing authority of scientific method, that social arrangements can be transformed by means of conscious and deliberate contrivance ".[1]

The result of Mr. Durbin's attitude is that he appears to be reproaching the economists for continuing to assert truths which cannot, he feels, be used as selling points.[2] Would he have them inhibit all lines of thought which seem to be politically unfruitful ? If he reproached them for having failed to provide him, as a politician, with an authoritative case on which to base his propaganda, he would be on firmer ground. The economists certainly have failed to assert with sufficient precision, unanimity and intellectual courage the folly of restrictionism in general and the consequences of labour protection in particular.[3] But their failure is chiefly due to the repercussions of politics upon economics.[4]

Among the abuses of modern society which he believes are irremediable except through his form of socialism, Mr. Durbin lays great weight on the divorce of ownership from control in the field of corporate activity. He says: "Directors have become all-powerful, shareholders all-powerless". The owner has become "a cypher, the shareholders' meeting a farce, and the directorate a dictatorship . . ." The control of industry has been placed "in the hands of an irresponsible, self-recruiting, nepotic oligarchy—the class of the *company director* . . . The shareholder is left as a functionless pensioner of the enterprise" (pp. 126–8). Moreover, decision-making in industry is more and more falling into the hands of *management*, which has "little or no *rentier* interest in the concern . . . and no formal control over it . . ." (p. 129). If the directorate of a railway disappeared overnight, the railway could continue to run. If the management of the railway suddenly disappeared, it would probably be unable to operate for a single day (p. 131). Between directorate and management "personal and group tension is inevitable. Interests conflict, forms of recruitment and education conflict, status within the organisation conflicts" (p. 132). For such reasons, "property in industrial capital has wholly lost the social functions supposed to be grounded in it". Hence the institution of property "is worse than indefensible—it is useless" (p. 135). We feel that few independent students of finance will disagree completely with some of these strongly-worded criticisms of contemporary company legislation and traditions. Even if Mr. Durbin has exaggerated the evils, the abuses which have developed can hardly be denied. But they certainly do not support his wild and startling assertion that the institution of property is 'functionless' and 'indefensible'. And in his apparent eagerness to show that the 'present system' *cannot* function defensibly, he ignores the prospects of reform in a field which other students believe to be fertile.

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[1] *Human Nature in Politics*, p. 92.

[2] Political salesmanship seems to be the main factor determining Mr. Durbin's attitude on other issues, which we have been unable to discuss here. For instance, his scheme for socialism would have to resort to the ' prosperity measures ' of cheap money and public investment, because depressions drive out governments. It is, he says, " difficult to exaggerate the political importance of these measures " (p. 297).

[3] We admit that the unanimous economists' condemnation of protective tariffs did not prevent their ultimate introduction in Great Britain. But would Mr. Durbin argue that tariffs are ' inevitable ' and that it is folly to work for their removal ?

[4] See the present author's *Economists and the Public*, Chs. X to XIV.

In any case, Mr. Durbin's conclusions are inadmissible. To recognise the defects of the joint stock system as it is to-day is not to admit that the divergence of interests between directors and shareholders is as great as he would have us believe. Nor has the increasing separation of directorates from actual management had quite the far-reaching consequences which he attributes to it. The main curse of restrictionist capitalism is that directorates *do* act in the sectional interests of their shareholders. They do so as effectively as trade union leaders act in the interests of union members. That is the real explanation of why shareholders acquiesce. Directorates are not 'functionless' because their trusteeship is far from perfect or because their policies are socially bad. And they do not become 'functionless' simply because in practice it is convenient to delegate entrepreneurship, i.e., the right to decide, to managements. Entrepreneurship is a system of government. It is true that if the personnel of Parliament were wiped out in an air-raid, the administration of the country would continue in some fashion, whereas if the senior Civil Service were completely destroyed, chaos would be threatened. It is true also that politicians in practice frequently betray the best interests of the community which elects them, and that bureaucracies (like managements) often obtain irresponsible powers. But these admissions (as Mr. Durbin himself argues) are no good grounds for condemning democracy: they do not show Parliament to be 'functionless': for politicians and governments are crudely changeable by the electorates, and civil services cannot disobey the specific commands of governments. Similarly, directorates are crudely changeable by shareholders, and their orders are always enforceable on managements in so far as enforcement is expedient.

The real weakness of modern society, as we see it, is that owners of services and physical property, i.e., individuals as employees and investors, have acquired too powerful a control (through trade unions, professional associations, firms, cartels and so forth). Owing to the very effectiveness of their control as owners, the producers' aspect of the community's interests (which is conspicuous) has become more influential than the consumers' aspect. The great problem of economic freedom has therefore become that of finding ways of breaking up the lines of entrepreneurial authority. It is a problem which is conceptually and practically distinct from that of efficient managerial organisation and technical concentration, although it is commonly confused with it.[1] It is concerned with facilitating the consumers' right of substitution,—of imposing restraints upon those investors' and employees' powers which are delegated to bodies like directorates and trade union executives. In other words, the problem is that of curbing powers which, in the case of investors, Mr. Durbin would have us believe do not exist at all.

The institutional basis of his solution of the problem of restrictionism is, not surprisingly, just the reverse. He advocates the centralisation of entrepreneurial power. The State must acquire "the power to decide the output, investment and employment policy of any economic undertaking" (p. 294). The required nationalisation will have no direct equalitarian aim. There will be full compensation for expropriation.[2] A "Supreme Economic Authority"[3] will be set up to take over the control of the "socialised sector of industry". Consideration of the necessary administrative machinery is deferred for a projected work on the *Economics of Democratic Socialism*. We are told, however, that the Authority will be concerned "with the interest of the consumer, with society as a whole, with the rational end and common good of wealth and production ". It will be its function to arrange that production is carried " far beyond the point, in many cases, of the output that would bring to a maximum the returns to particular industries . . . " (p. 303). That is an admirable aim. It is in all respects identical with that of the advocates of competitive capitalism. But whereas the latter would recommend the removal from entrepreneurs (as far as practicable) of the power to restrict, whilst they would recommend the creation of institutions which facilitate substitution, Mr. Durbin's recommendations are apparently based on the opposite principle. Subject to the ultimate check of political expediency, he would confer on the Authority the *power* to restrict to any extent, trusting to its disinterestedness and wisdom to pursue an expansive policy. " All final responsibility for output . . ." he says, must be taken " out of the hands of those who could benefit in any way from restriction " (p. 303). That is, of course, the only sound administrative principle where controls in the collective interest are necessary. But the greater part of restrictive *legislation* has been introduced and voted for by those who have not had actual investments in the industries which have gained from it. Hence, direct financial disinterestedness is by no means a safeguard if it is accompanied by the desire to retain a well-paid or dignified post. Moreover, when the *power* to restrict has been removed from entrepreneurs there remains a strong urge to achieve economies. Will *this* incentive be present in the controlling officials ?

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[1] It should hardly be necessary to state that the diffusion of entrepreneurial power does not involve the sacrifice of any of the economies achievable through co-ordination, standardisation and the pooling of knowledge.

[2] The only directly equalitarian measures to be taken are 'liberal' rather than 'socialist'. Mr. Durbin proposes to resort to taxation of inheritance under "some form of the Rignano plan" (p. 297), and to Hugh Dalton's very practical suggestion for dissolving private property rights in large estates by means of terminable annuities (p. 305). It is strange that Mr. Durbin does not refer to the most obviously inequalitarian institutions of modern society, namely professional organisation and privileges. If the competitive solution had been his frankly confessed ideal instead of his tacit ideal, he would have been forced to a recognition of this point as a corollary of the general principle that competition is itself the strongest of all equalitarian forces.

[3] This body corresponds to Dr. Dickinson's "Supreme Economic Council" and Professor Lange's "Central Planning Board".

Let us ignore for the moment the theoretical question of how the right outputs could be determined by such a board. In practice we should *at best* almost certainly have all over again the history of former attempts to determine outputs (or prices) by ' reasonableness '. Does experience of the Courts in ' restraint of trade ' cases encourage us to believe that the Authority would be able to envisage the desirability of outputs which greatly reduced the aggregate earnings of the capital equipment and labour employed in any line of production ? In one of the typical leading cases, the House of Lords had to consider a combination which purchased salt at 8s. per ton and sold it at from 18s. to 23s. per ton. This was held to be reasonable and not contrary to public policy. Lord Haldane argued in defence of this judgment that " an ill-regulated supply and unremunerative prices may, . . . be disadvantageous to the public. Such a state of things may, if it is not controlled, drive manufacturers out of business or lower wages, and so cause unemployment and labour disturbances ".[1] As Mr. Durbin knows well, such ways of thinking dominate all public discussion outside the academic journals. How could they be overcome ? He may say that his intention is that economists who do not suffer from such misconceptions should constitute the main personnel of the Authority. That body might perhaps start with economists as its most important members. But how long would they last ? In so far as the Authority carried the production of a particular commodity beyond the producers' private optimum, all the distributive difficulties popularly called 'ruinous competition', 'over-production', etc., would be encountered. Certainly these difficulties would resolve themselves in the long run (a) if the right to 'withhold capacity' (i.e., the right of collective bargaining) by labour were suppressed; (b) if the release of 'withheld capacity' were tactfully planned and generally enforced; and (c) *if the ultimate outputs were wisely determined.* Provided that due recognition was given to the principle of gradualness; provided that all productive factors were controlled and that the range of activities covered was sufficiently wide and diversified; and *provided that the Authority had trustworthy criteria for determining the right outputs*, there is no reason why an expansive policy should not succeed under a *dictatorship* of disinterested economists accepting consumers' interests as their ideal. The expansion of capacity in one field contributes towards an increasing demand for the expanding capacity in all other fields, and *given the existence of standards of ultimate outputs* there are theoretical solutions to the problems which arise. But could the intermediate steps be taken under a *democratic system* unless the electors had been taught all those elementary lessons of economics which so far neither they nor the politicians have been able to grasp?

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[1] *North-Western Salt Co., Ltd., v. Electrolytic Co., Ltd.* (1914).

What methods would the Authority have to employ? How would it determine the right outputs and prices? Mr. Durbin does not give us any details. We must wait for his projected sequel. By implication, however, he clearly recognises 'consumers' sovereignty'; hence the actual methods he envisages may not be dissimilar from those contemplated by Dr. Dickinson, and Professors Lange and Taylor. If so, we have no criticism to add to that of Professor Hayek. Mr. Durbin will undoubtedly face that helpful criticism; but the realism of his diagnosis of the ills of present society, and certain phrases in his work,[1] make us feel that he is prepared to compromise with the institutions of private enterprise to a greater extent than Dr. Dickinson or Professor Lange. We may therefore be able to help Mr. Durbin's future speculations by considering the possibilities of such compromise. As his fundamental aim is to prevent the withholding of capacity, we can imagine a scheme which, although it may not be that which he actually envisages, is nevertheless consistent with his ideals and basic method. The motive of the Authority will be disinterested. It will not be searching for profits. But it must be willing to submit its disinterestedness, wisdom and efficiency to continuous testing. It must, therefore, submit itself to a discipline exactly resembling ideal anti-monopoly legislation, and permit a margin of private enterprise where the latter can survive in competition with the Authority. Interloping capital and labour must be allowed to break into the market whenever they can supply goods and services more cheaply than the State undertakings.[1] They would be in a position to do so profitably only where the State-controlled output fell short of the social optimum. Hence there would have to be State ownership without State monopoly.

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[1] E.g., his reference to 'half-way houses' (p. 294).

Obviously, the weakness in such a system would be that the Authority, whose policies might seem to be implicitly criticised by the interloper's appearance or survival, would be responsible for protecting the interloper. It seems certain that in practice, with State-owned undertakings dominating any industry, subtle means of coercion through various forms of subsidy, aggressive selling, discrimination, boycott and so forth would be resorted to. Even if economists formed the Authority, they would hardly be trustworthy arbiters of the social desirability of buying and selling policies which might have the effect of discouraging competition with undertakings ultimately directed by them. Moreover, even if no coercive methods were used against interlopers, it would often be possible in practice for a dominating State enterprise to maintain output below the social optimum. For interlopers might have to operate on a small scale and at high cost. Thus, having contemplated what seemed at first a workable interpretation of Mr. Durbin's suggestion, we feel that it has a wrecking weakness.

At the same time this line of speculation points to a not dissimilar scheme which does seem to be compatible with the nature of society as we know it. There is a very strong practical case for State *competition* under a system of private enterprise provided that no State undertaking is allowed to dominate an industry,[2] and that it is subjected to the same independent anti-monopoly control as industries in general.[3] A socialism developed along these lines might well succeed. There would exist on one side, under the privately-directed sector of an industry, the enterprise and efficiency urge of profits. On the other side, and competing with it, there would be the State-directed sector, the disinterested control of which would expose, and quietly enforce the dissolution of, contrived scarcities. The difficulties and dilemmas to which such a scheme would give rise are many. But they could probably be overcome; and they are those which would be encountered in any competitive regime, whatever the form of its institutions.[4]

There is a separate objection to Mr. Durbin's scheme, however. Whatever its form, it would be frustrated because he proposes, for political reasons, to maintain the right of collective bargaining. Moreover, he regards it as significant for the political stability of the socialist regime that, from the first, forty per cent. of the employed population would be brought into the socialised sector of the industry. He obviously regards their consent, through the ballot box, to be essential. This being so, the political absurdity of imagining that the Authority would be allowed to increase outputs beyond the private optimum for any industry becomes still more manifest. The dissolution of one side of a joint monopoly must at least weaken, if it does not dissolve, the other side. In practice, the distributive difficulties will be as great from the labour side as from that of capital. It would certainly be possible to guarantee the earnings of vested interests in the labour field whilst dissolving their right to withhold capacity (as we have already pointed out) ; and that *may* be what Mr. Durbin intends. But it would involve the complete disappearance of trade unionism as we know it. Hence, on the assumption that he is contemplating trade-unionism as an institution which must continue simply in name, for political reasons (as in the totalitarian countries), our objection expressed in this paragraph does not hold.

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[1] It may be objected that this would give an advantage to private firms or individuals paying 'sweated' wage-rates. The answer is that the State should prevent the offer of low wage-rates by itself offering better terms of employment to all available labour. In other words, private enterprise would be able to get labour only by outbidding the State. We assume that readers who understand Mr. Durbin's case will recognise also that employers paying low wage-rates are the parties the least to blame for low earnings.

[2] Except in the case of public utilities, and even then a State-owned enterprise should not be protected against any form of competition.

[3] State competition could act, in itself, as a most important part of anti-monopoly institutions.

[4] The difficulties arise out of the remuneration of the function of risk-bearing through experiment. They have been dealt with by the present writer in an article on "Privacy and Private Enterprise," in the *South African Journal of Economics*, December, 1939.

Even so, we still have our original objection to State monopoly or industries dominated by State-owned enterprises. Such schemes rest upon the assumption that disinterested expert economists will in fact be appointed (by the politicians) to be the benevolent dictators of industry. What good reasons have we for believing that the politicians would continue to allow the right people to form the Authority, even if they appointed them at the outset ? It is not a question of disinterested economists being *psychologically* incapable of directing industry properly without themselves owning the property or being responsible, in the case of each venture, to the specific owners. It would not even be necessary to " make use of differential incomes to secure a high degree of effect and output " (p. 355), which seems to be one of the incentives for the controllers of socialised industry which Mr. Durbin (like others who have thought along similar lines) apparently proposes to adopt. The right people, armed with defensible output criteria, could do wonders without any financial incentive, just as a liberal and wise dictator might fashion a Utopia and educate his people for it within a few decades. But we are opposed to dictatorships partly because we have no guarantee that the right people will dictate ; and we are opposed to Supreme Economic Authorities *with the right to determine outputs* partly because we have no guarantee, and cannot be given an acceptable guarantee, that they will have the right personnel. For under democracy trusteeship to electorates must replace trusteeship to shareholders ; politics must replace entrepreneurship. And politics has all the vices of entrepreneurship without its virtues. There *are* important collective functions which could be safely entrusted to an economic Authority whose independence from politics could be in some way constitutionally entrenched. But the determination of output and prices is not among these functions.[1] The detailed execution of a plan for the transition to a competitive or equalitarian economic order and the maintenance of that order might be entrusted to a body like the Federal Trade Commission (of the United States) with greatly extended functions. But entrepreneurs, not politicians, would have to determine the utilisation of resources.

This is in part the answer to Mr. Durbin's suggestion that the objections of orthodox critics to control by Supreme Authorities are based upon psychological presumptions which are not induced from evidence (p. 355). He does not develop this point; but he phrases the orthodox view, which he rejects on psychological grounds, in these terms: "Adjustments will be made . . . only if the individuals, whose interests are adversely affected by them, are quite powerless to influence the course of events, and this condition will obtain only if there are so many of them determining each particular decision that they are all impotent to influence the nature of it" (p. 354). This is not an unfair broad statement of the orthodox position. But that position is based on the simplest of psychological assumptions, all of which Mr. Durbin would surely admit. Evidence *does* suggest that power-holders tend to be corrupted by the desire to retain their power. At the same time no one would deny that individuals do exist who could be trusted to wield certain kinds of power for the social benefit. The difficulty is simply that of finding some machinery for choosing such individuals and for protecting them from dismissal when they place inconspicuous public benefits before vested interests. Unfortunately, that difficulty seems to be insoluble. *Judges* may be given adequate protection in so far as their function is merely that of interpreting the law and determining questions of fact. But the directors of the economic system would have to account for their decisions to elective governments, behind whom the 'pressure groups' would lurk. Certainly the control boards appointed by the Authority *might* be so constituted as to exclude all those likely to benefit or lose from policies adopted. But the government of the day, naturally seeking to perpetuate itself, would retain the final voice. If Mr. Durbin has found the economists unconvincing on such points, what has he to say about Walter Lippmann's exposition of the problem in his *Good Society*? Lippmann should have been answered.

The only hint of actual evidence ignored by the orthodox is contained in a footnote. The economists have taken their evidence of entrepreneurial behaviour, it is suggested, from systems of State-organised monopoly. "It is pure assumption to transfer this type of behaviour to the circumstances of a planned economy. To do so it is necessary to ignore all the evidence derived from the experience of Russia and Germany. Whatever the faults of economic administration of these countries, *restriction* has not been one of them" (p. 355). But no recourse to psychology is required for the interpretation of this experience. The simple explanation is that in those countries there exists no right to withhold capacity in response to the dictators' will; whereas in countries in which the consumers' will is more or less vaguely recognised as the criterion of productivity, we foolishly permit capacity to be withheld. Mainly owing to that spurious principle of freedom, 'the right of association', *consumers' sovereignty* can be frustrated. There *is* a certain source of strength in the dictatorships; but it is a source of strength which is equally available for any free society which will courageously tackle the problem.

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[1] Price fixation might be legitimately resorted to in certain conditions as part of a comprehensive scheme of anti-monopoly control.

There are, then, no subtle questions of psychology at issue.[1] The crucial psychological assumption made by the orthodox is, we feel, that which can be briefly summarised in J. S. Mill's terms: "The influence of a sense of duty, or feelings of philanthropy (are) motives never to be exclusively relied on".[2] "Although the actions of rulers are by no means wholly determined by their selfish interests, it is as security against those selfish interests that constitutional checks are required."[3] And it is against similar 'selfish interests' on the part of decision-makers in the economic field that divided, not centralised, control of the response to demand is required. Our relevant psychological assumption goes no deeper than this. But it is a very important assumption. On it must be based all rational institution-making allocating the province of the State. And if Mr. Durbin himself builds on it in sketching the plan he has promised us of the economic institutions of a 'socialist' order, he will find himself with a scheme which, whatever name he finds it expedient to use, has preserved the institution of property.

He need not, for that reason, jettison the goodwill attaching to the word 'socialism'. He can advocate what he calls "socialism in a broader sense" (p. 32). He can claim that the essence of socialism is simply equality and democracy. If he tackles his severely practical problem within the confines of these broad ideals and throws off the restraints imposed by adherence to traditional socialist forms (as he has already largely thrown off the intellectual restraints of traditional socialist dogmas) he can produce a plan whose political appeal would extend far outside the labour movement. Political realism need not mean casuistry if the motive to reform is stronger than competition for power within the labour camp.

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[1] Mr. Durbin's interesting discussion of social psychology in the first part of his book is very convincing; but it seems to us to weaken rather than strengthen the case for centralising power.

[2] *Logic*, 1st Edition, Vol. II, p. 555.

[3] *Ibid.*, pp. 557–8.

Book Reviews

Freedom and the Economic System. By F. A. VON HAYEK. Public Policy Pamphlet No. 29. University of Chicago Press. (Publishers in Great Britain and Ireland : Cambridge University Press.) 1939. iv + 38 pp. 1s. 3d.

This pamphlet is a manifesto, at once concise, cogent and eloquent, of individualistic liberalism. It is a fundamental challenge to the doctrine of liberal socialism.

The holders of the latter doctrine believe that a necessary (though not a sufficient) condition of personal liberty is a guaranteed livelihood to every member of the community, and also that large inequalities in income mean inequality in the degree of liberty enjoyed. Despairing of the ability of an unregulated free-market economy to produce any tolerable approximation either to security or to equality of income, the liberal socialists recommend a planned collectivism, which, they hope, will achieve the ends of security and equality while preserving that of liberty (or at any rate calling for no greater restrictions on individual liberty than those inherent in the system of private property).

Professor Hayek does not deal specifically with the view that security and some degree of equality are necessary conditions of personal freedom. What he does is to launch a whole-hearted attack upon the idea that any form of economic collectivism is compatible with individual liberty or with political democracy.

The kernel of his argument is that collectivist economic planning involves the planning organ of society (*scil.* the government) in making final and authoritative decisions concerning the relative importance of different human needs : it therefore presupposes a very large measure of agreement on the part of the whole people in the matter of social values. Now this agreement does not exist in a (relatively) democratic capitalist society. Therefore, in a collectivist society, the government will have to *impose* it on the community. This means the suppression of conflicting judgments, the stifling of doubts and criticisms of governmental policy, in short the abolition of intellectual liberty and the setting up of a totalitarian state. The author goes further, and asserts that centralised economic planning presupposes the existence of a complete moral code settling with quantitative exactness the relative importance of all human values ; and that, since such a code does not at present exist, it would have to be created *and enforced* under a collectivist régime.

By contrast, it is assumed that the individualist system of private property and the free market is, in fact, neutral as between different human ends; that it imposes no ready-made code of relative values on the community, but is, on the contrary, a rational system of law, under the rules of which each individual is free to choose, within the limits of his income, the ends that he desires to pursue. On these grounds the author claims that, far from democracy and capitalism being incompatible, as the socialists assert, democracy is only possible under the régime of private property and the free market. The price we have to pay for a system of free discussion and government by agreement is the restriction of governmental action to fields where agreement on common values can be obtained. By implication, this means the exclusion of governmental action from the economic field.

But is, in fact, the system of private property neutral as between different ends? The inequality that seems to be inseparable from it gives it a bias towards the ends and values of the wealthy minority of the community. Moreover, the 'ballot of the market' involves not only outrageous plural voting but also wholesale intimidation of the smaller voters by a few great pluralists. A study of the technique of advertising and of the economic forces behind it (particularly the way in which the interests of advertisers influence the relative importance given in the popular press to different aspects of social life) shows how greatly the value judgments that are considered by business men to be good for business (not necessarily those of business men themselves) are imposed upon the mass of the people. Under the private-property system, as under collectivism, decisions concerning social ends are imposed on the community, doubt and criticism of the wisdom of these decisions is discouraged, conflicting value-judgments are censored. These decisions are not, however, those of the government, but those of the small and irresponsible minority of wealthy men who exercise control over the community's accumulated resources.

In truth, *every* social system implies a set of common values and generally accepted ends, and it enforces their acceptance by various sanctions. All individual freedom is relative to a certain framework of rules which are inherent in the particular type of society in which one lives. The issue between individualism and collectivism resolves itself, in this respect, into three questions: (1) Is the set of value judgments inherent in collectivism preferable to that inherent in individualism? (2) Are the sanctions of collectivism likely to be milder than those of individualism? (3) Is the field of individual liberty under collectivism likely to be wider than under individualism? The third question may be further resolved into: For what persons or groups of persons is the field of individual liberty likely to be greater under collectivism than under individualism?

In this debate it would seem as if both sides have failed to state their case fully enough. The libertarian socialists, although proclaiming liberty as their goal, have failed to analyse clearly enough what kinds of liberty would be possible within the framework of their planned socialist commonwealth and to indicate what mechanism it would contain for guaranteeing specific liberties. Their ideal is a collective economic machine that should be as impersonal and as automatic in satisfying the individual's economic wants, on a basis of equal individual rights to satisfaction, as the political and legal machine of the private-property system is supposed to be in satisfying his juridical claims. This implies the working out of some sort of economic ' Bill of Rights ', analogous to the political ' Bill of Rights ', and the devising of institutional machinery for implementing them.

On the other hand, the liberal opponents of collectivism have not so far entered the field with a positive programme. Can they suggest any workable set of institutions in the realm of property, inheritance, contract, money, and business organisation which will be compatible with private property and the free market and which will at the same time guarantee the ordinary man a reasonable security of livelihood and prevent the accumulation of wealth (and, what is still more important, the concentration of power over wealth) in the hands of a minority of the community ? In the pamphlet under review, Professor Hayek hints at the possibility of such a programme. He admits that the " task of creating a rational framework of law has by no means been carried through consistently by the early liberals. After vindicating on utilitarian grounds the general principles of private property and liberty of contract, they have stopped short of applying the same criterion of social expediency to the specific historic forms of the law of property and of contract . . . Unfortunately, however, many of the nineteenth-century liberals . . . were on the whole content to accept the law in its existing formulation . . .". It is greatly to be hoped that Professor Hayek will follow up this tantalising hint with a blue print for a liberal classless society.

H. D. Dickinson.

Capitalism the Creator. The Economic Foundations of Modern Industrial Society. By Carl Snyder. Macmillan & Co. Ltd. 1940. xii + 473 pp. 16s. net.

This book is likely to arouse a host of prejudices. Its theme, well described by the title, in itself will probably put off many of the readers who would profit most from its contents. The methodological axe which the author has to grind is likely to make another class of readers suspicious. And certain tricks of style—there are sometimes rows of sentences without a verb—will probably irritate many more. Yet it would be most regrettable if these facts deprived the book of the deserved success. It deals with problems of profound importance. It does so lucidly and effectively. And the author shows in consistently maintaining a highly unpopular attitude towards the great problems of our day an intellectual courage which is rarely found.

Mr. Snyder is a rare and almost unique figure in that, although by training and sympathy a pure scientist, an enthusiast for the application of the methods of the natural sciences to social phenomena, and full of the contempt for " theoretical speculation " which usually accompanies this view, he has not by this been led to advocate " planning ", " conscious control ", and still less to any heretical views on currency, as is the case with so many, if not most, of the scientists and engineers who have turned their minds to social problems. On the contrary, as will be known to most of the readers of this journal, Mr. Snyder thoroughly believes in the freedom of enterprise, and, though in so far as currency matters are concerned he believes in control, his views there are much closer to those of the great liberal writers of the nineteenth century, and particularly of the Currency School, than to the fashionable views of our day.

In support of these views Mr. Snyder marshalls a most impressive body of evidence on the rate of progress which capitalism has made possible during the last two or three generations, drawing from an unusually wide and varied stock of knowledge. And as we would expect from an acknowledged master in the field of the statistical study of economic phenomena, the present attempt to make the gist of his more specialised studies accessible to a wider public throws much new light on interesting aspects of economic evolution.

But Mr. Snyder aims at more. He hopes to refute by his array of facts the views now prevalent on the dangers of over-saving, the necessity of planning, and the desirability of abolishing capitalism in general. Yet, although I happen entirely to agree with him on almost all these points, I fear that his facts will convince few who hold contrary opinions. His argument moves throughout on the level of sound, I believe very sound, common sense. But this is scarcely sufficient to refute the current, highly complicated theories—Mr. Snyder would probably say sophistries—by which these facts can be given an entirely different interpretation. While the " modern " economists who no longer believe in the crucial importance of a sufficient supply of savings for industrial progress, or in the prevention of credit expansion as the only feasible prevention of depression, would do well carefully to study and to ponder over Mr. Snyder's facts, I am afraid the issue will have to be settled in that sphere of abstract reasoning for which Mr. Snyder has so little patience. Although he would probably not admit it, his own interpretation of facts is everywhere, and inevitably, based on theories which differ from those of the theoreticians only by not being stated explicitly. In fact the absence of those precise definitions which constitute so large a part of all theoretical work in places considerably weakens his argument. To give a single, but characteristic instance, the author leaves it rather obscure, whether by " capitalism " he merely means production with the help of large quantities of capital, or the system of free enterprise and private ownership of the means of production to which it is commonly applied.

The reference to Böhm-Bawerk when the author undertakes to "show what capitalism is by considering what capitalism does" (pp. 120, 436) and the use of the term "state-capitalism" for the present Russian system suggest the former interpretation, but much of the argument of the book would lose its point if it were really meant in this sense.

There is much incidental useful information in the book which cannot be mentioned in a brief review. But special attention may perhaps be drawn to the short but illuminating account of the circumstances which determined the policy of the Federal Reserve System in the crucial period 1927–1928, that has puzzled many writers (pp. 227–8). The 44 statistical charts which the book contains deserve close separate study, but they have unfortunately not been sufficiently related to the text.

F. A. v. HAYEK.

History of Monetary and Credit Theory from John Law to the Present Day. By CHARLES RIST. London: George Allen and Unwin. 1940. 442 pp. 25s.

This rich and fascinating book irresistibly suggests a musical metaphor. It is a series of symphonic variations upon two intertwined themes. Better still, perhaps, it is an opera in the grand manner, complete with heroes, villains, *leit-motiv* and full orchestration. It has the sweep and finish of such a composition, and its effect is similarly cumulative, so that the reviewer is left with a difficult task in trying to recapture the successive steps by which his understanding has been enriched. The French habit of substituting an analytical 'Contents' for a subject-index adds materially to his problem.

Professor Rist's main thesis, however, is that money must be carefully distinguished from bank-notes, which are only "the material embodiment of the velocity of circulation" (p. 19). Further, the emphasis which he lays on the 'store of value' function of money drives him to deny that title even to Government-issued and legal-tender paper. He confines it to metallic money; in practice, to gold. Arising out of this is the second theme, that price-stabilisation is a will-of-the-wisp, since gold production is arbitrary, and since paper of any kind (being only credit, and not money) can have but short-lived effects on the level of prices.

Professor Rist's approval is, therefore, given to writers who perceive these distinctions, and he is most critical of those who appear to ignore them. He finds the former chiefly amongst the men of affairs—Cantillon, Thornton and Tooke—and the latter amongst the theorists—especially Ricardo, who is the real villain of the piece, as Thornton is the principal hero.

Around the names which he has selected for notice, Professor Rist has built up what he expressly describes as a history of ideas. Significant parallels are developed between the problems of 1925—

1931 and those experienced a century or two earlier. These analogies are traced first by way of illuminating summaries of eighteenth and nineteenth century views on the relationship of money to credit and of gold to the price-level. Sandwiched between these are three chapters on the background and consequences of the Bullionist doctrine, its essential difference from the Ricardian teaching, and its ossification into the 1844 Act. Moving on to the twentieth century we meet controversies over the functions and value of money, over Knapp, and over price-stabilisation. By way of *coda* there is a final chapter on the theory of Central Banks of Issue, from Cantillon to Warburg and Hawtrey.

It will be seen that the ' Present Day ' of Professor Rist's title is a relative term. His book was first published in French in 1938, but the intense intellectual activity in these fields during the past few years has actually left little mark on his survey. Mr. Keynes' *General Theory* achieves mention only in two footnotes, of which one is a rather Puckish reference to Silvio Gesell. Professor Robertson appears only as the author of a classification of the kinds of money. Professor von Mises does not come in at all. Devaluation is dismissed in passing with the remarkable assertion that " It consists in a sudden adjustment of the price level " (p. 376). Inflation and deflation occur only as forms of changing velocities of circulation ; their effects on the structure of production are unnoticed. There is no explanation of the drift away from gold as a basis for currency which prompted the Tripartite Currency Agreement of September 1936 and reached its peak in British monetary policy in September 1939. In fact, Professor Rist commits himself to the statements that " bank-notes, whether legal tender or not, derive their value wholly from their convertibility " (p. 398), and " At the present time no credit system is conceivable without a gold basis, whether direct or indirect " (p. 434).

In so far, therefore, as it is possible to talk of distinctive ' French ' and ' English ' schools of monetary theory, it is clear that Professor Rist belongs to the former ; the questions upon which he lays most stress are those with which nowadays we tend less to concern ourselves, and the threads which he traces through the past not those which we, perhaps, find most helpful. The English reader will thus feel that the perspective of this book is somewhat unfamiliar. He may also think that the broad and vigorous strokes with which the argument is built up tend somewhat to over-simplification, and to the omission of refinements which really need inclusion. No reference is made, for instance, to Samuel Bosanquet, Joplin or James Wilson—to name only Englishmen—while Sir James Steuart fully deserves, as the author himself suggests, to be rescued from his ill-deserved eclipse by the contemporary *Wealth of Nations*. None of these were without real influence on the development of the theory of central banking in this country, and difficult as was Professor Rist's task we should have been glad to have their contributions assessed.

But within the limitations which he has set himself, Professor Rist has laid us in his debt for a survey at once broad and subtle. His book deserves careful reading and re-reading, and it will throw out many illuminating suggestions. Not only those facing for the first time the staggering mass of original sources which he surveys, but others already working on parallel lines will find here trenchant comment and an admirable exposure of inter-connections which are only too easy to miss. The workmanlike translation, by Jane Degras, adds materially to the usefulness of his book to the insular reader.

J. K. Horsefield.

The Stock Market Credit and Capital Formation. By Fritz Machlup. William Hodge & Co., Ltd. 1940. xii + 416 pp. 21s.

This book is a translation of a revised version of Dr. Machlup's *Börsenkredit, Industriekredit und Kapitalbildung*, originally published in 1931. It is always interesting, to one who has not been able to read the original, to see a subsequent translation of a famous book, if only to appreciate the source of many important ideas which have become part and parcel, if not of the body of economic doctrine, at least of the material of economic controversy. The present book, however, is much more than a mere translation, for Dr. Machlup has extensively altered many sections and has added much new matter to bring his work up to date.

The contents of the book can be divided into two main parts. In the first, which comprises the first nine chapters, Dr. Machlup is concerned mainly with the question of whether stock exchange speculation 'absorbs capital' and so, by depriving industry of its use, helps to bring about the collapse of an industrial boom. A closely reasoned and well documented argument brings him to the conclusion that, especially in the technical conditions existing in the United States, the locking up of capital during a stock exchange boom, in the form of an increase in the amount of money held up in the financial circulation, is much smaller than is generally supposed, and is likely to occur only when a substantial element of inflation is present. Since it helps in some degree to offset the inflation which caused it, any "locking-up" of capital that occurs must be regarded as a (probably unimportant) factor tending to maintain equilibrium. In the course of his exposition, Dr. Machlup explodes a number of fallacies, among which is the idea that losses due to stock exchange speculation in existing securities are losses to the community, instead of mere changes in the distribution of wealth.

The bulk of the remaining eight chapters is devoted to an examination of the relation between stock exchange speculation and the level of business activity. Dr. Machlup's general theory of industrial fluctuations, outlined in Chapter XI, is unashamedly 'Austrian', and this chapter stands virtually as it was originally published in 1931. In subsequent chapters emphasis is laid on the view that almost all investment, whether on long term or short term, and whether invested in durable or non-durable goods, is incapable of withdrawal from the system as a whole, even though individual investors may be able to recover their money.

Of these sections two minor criticisms may be made. Firstly, Dr. Machlup might have pointed out how much more important it is for the system as a whole for some sections to safeguard their liquidity than for others ; thus, for instance, the enforced liquidation of a bank is likely to have much more profoundly disturbing effects than that of most other institutions, since a bank's liabilities constitute a part of the system's stock of money while those of other institutions do not.

Secondly, it would seem that Dr. Machlup tends to underestimate the possibilities of genuine liquidation brought about by a reduction in the proportion of circulating to fixed capital. It is true that mere changes in interest rates within the normal range would in most cases provide inadequate incentive for such liquidation ; but in most cases changes in published rates are much less than the changes which take place in the effective rates payable by individuals at the margin. For instance, a reduction in, or more rigid enforcement of, the limit of a firm's overdraft, on which it pays interest at 5 per cent., may compel it either to reduce its capital requirements (which can be done quickly only by a reduction in its circulating capital), or to have recourse to other and much more expensive sources of credit. For the now unsatisfied margin of its requirements it may have to borrow by means of hire-purchase facilities at perhaps 10 per cent. per annum, or by the forfeiture of its normal cash discounts, costing it perhaps as much as 20 per cent. per annum. Still worse, it may be compelled to borrow involuntarily by postponing payment to suppliers, thus impairing its financial standing and incurring a loss of goodwill, equal perhaps in the long run to many hundreds per cent. of the amount of capital involved.

On the question of the effect of stock market operations on the rate of interest, Dr. Machlup points out that since the stock market does not 'absorb capital' to any appreciable extent, stock market operations cannot raise the rate of interest except in so far as they constitute a channel by which funds can flow from one market to another. If borrowed funds are used to buy securities from sellers who use the proceeds for the purchase of commodities, whether consumption goods or producers' goods, or from sellers who re-lend the proceeds in the long-term market, then the effect of the transaction is to raise the short-term rate of interest. Dr. Machlup lays little, perhaps too little, emphasis on the possible finance of consumption in this way ; but he regards the variations in the use of short-term credit, via the stock exchange, for permanent investment in industry as a major factor in the course of the trade cycle, whether the credit originates from the banks or from individuals with temporarily idle funds to invest. If this process results in a rise in short-term interest rates, the rise is due, not to competition for the available funds by the stock exchange with industry, but to competition by industries requiring long-term finance with those requiring short-term finance. Dr. Machlup therefore regards stock exchange indices, correctly interpreted and taken in conjunction with others, as of the greatest possible use for the diagnosis of the position of the trade cycle. He also thinks that measures designed to exercise direct control over stock exchange activity, such as the power to vary margin requirements, may be of considerable use in checking the development of an industrial boom, if such a course is considered desirable. On the other hand, attempts to check stock exchange speculation by means of credit restrictions, while attempting to maintain the supply of credit to industry undiminished, are self-frustrating and will inevitably fail.

Throughout his exposition Dr. Machlup maintains his own high standard of clarity and lucidity. This sometimes has the effect of making the reader feel that Dr. Machlup is explaining an obvious point, but a little reflection will usually show that the point was not obvious until Dr. Machlup had explained it.

The book contains as appendices more detailed explanations of certain technical points, a 'Statistical Narrative' for the United States, some notes on relevant British statistics and the lack of them, and a number of extremely useful statistical tables. The translation, by Dr. Vera Smith, could hardly be improved.

F. W. Paish.

Report of the Royal Commission on Dominion-Provincial Relations. Book I, *Canada, 1867–1939*; Book II, *Recommendations*; Book III, *Documentation.* Ottawa, 3rd May, 1940. 261; 295; 219 pp.

There is material of interest to the economist, the constitutional lawyer, the transport specialist, the labour expert and especially to the student of federal public finance in the *Report of the Royal Commission on Dominion-Provincial Relations.*

The Mackenzie King government which appointed the Commission in 1937 gave it great scope but in particular it was instructed "to examine the constitutional allocation of revenue sources and governmental burdens, . . . to investigate the character and amount of taxes collected, . . . to determine whether taxation as at present allocated and imposed is as equitable and efficient as can be devised, . . . to examine public expenditures and debts in order to determine whether the present division of the burden of government is also equitable and efficient . . . and to investigate Dominion subsidies and grants to provincial governments".

The report is in three volumes, the first historical, the second containing recommendations and the third statistical and documentary.

The many pages devoted to a recital of the reasons for Canada's financial difficulties make dreary reading indeed because they represent only a special case of problems common to most federations. Such statements as this have a familiar ring: "No logical relationship exists between the local income of any province and the constitutional powers and responsibilities of the government of that province". Also: "Another unfortunate result of the present distribution of financial powers is the incentive to rely on taxes on costs instead of taxes on surplus. This weakens Canadian competitive power abroad and involves great pressure on marginal enterprises".

The Commission declares its aim to be (a) to provide for a more equitable distribution of governmental burden and of social service benefits and (b) to design a revenue system and general fiscal policy that will stimulate rather than depress the national income.

Like the tradesman who shows his best wares first in the hope that the inferior articles to follow will enhance these wares by contrast, the Commission sets forth two plans. Number one is comprehensive and valuable; number two is the 'straw man' which the report soon tears to shreds.

The *quid pro quo* of Plan I follows:

1. The provinces should withdraw entirely from the following tax fields:
    - (a) Income taxes.
    - (b) Corporation taxes.
    - (c) Inheritance (or Succession Duty) taxes.

The provinces should agree to the cancellation of existing subsidies from the Dominion.

2. The Dominion should assume—
    - (a) All deadweight provincial debt service (or 40 per cent. of the combined net provincial and municipal debt service, whichever is the larger).
    - (b) Responsibility for unemployed employables.
    - (c) New National Adjustment Grants to certain provinces to provide at least average Canadian standards for all social services in all provinces.

Plan II is simply a continuation of the present system of financial arrangements between the Dominion and the provinces with the exception of Dominion assumption of responsibility for the case of unemployed employables. It lacks most of the merits of Plan I and has the obvious defect that the Dominion government is not provided with revenue to finance the great additional burden and could do so only by increasing its taxes in competition with existing provincial taxes.

In most important respects Plan I seems sound. By concentrating three such important taxes plus control of the public debt in federal hands, it makes possible tax reforms to shift burdens from business costs and marginal enterprises, removes the annoying and expensive duplication of tax machinery and concentrates debt control under the one authority which has the widest credit base and control of related powers. Most important, it facilitates the co-ordination of taxation, borrowing and expenditure policies throughout the business cycle with monetary, trade and employment policies.

Federal responsibility for the unemployed has long been recognised as desirable since the problem passed from the local to the national sphere.

From the viewpoint of political expediency the plan also looks attractive. The provinces may claim that their constitutional rights are being undermined, but the report devotes twenty pages to show that every province, except Prince Edward Island, will benefit financially, even before the addition of Adjustment Grants. From past experience one would expect monetary considerations to outweigh constitutional arguments.

There seems to be some obscurity in connection with the National Adjustment Grants. From their name one might think of them as Finanzausgleiche or financial adjustments of a secondary nature involving transfers between the federal and provincial governments to settle minor temporary inequalities or revenue deficiencies. But according to the Report these grants are to ensure provision for public welfare, education and provincial development and conservation expenditures up to certain Canadian standards. If Plan I is intended to be a readjustment of the basic constitutional arrangement of the distribution of the sources of revenue and responsibilities of expenditure, surely it should make provision for these permanent burdens. The report maintains, however, that these functions can best be supervised by local authorities and so may not be included with functions transferred to the federal government. If that is so, and still some provinces cannot finance these functions without federal assistance, are we not back where we started, namely, with a basic division of responsibilities and revenues, supplemented by a subsidy system for transferring resources from wealthier to poorer provinces through federal auspices? The report appears to indicate that there is small chance of escape from a subsidy system in any federal state.

At least the new plan is superior to what has gone before because it does provide a greater degree of financial independence and a reduced need for federal-provincial transfers.

The justification for payment of unconditional subsidies is usually either (a) that they are a method of compensating particular provinces for any adverse effect upon them of federal policies in regard to tariffs, subsidies, shipping rates and the like or (b) that they are simply to meet the urgent fiscal needs of provinces whose standards of government and social service must not be allowed to sink much below the standard of the rest of the nation. Although the Canadian commission wisely chose the second of these warrants, it did not adopt the policy of the Australian Grants Commission and show the exact method—the arithmetical calculations, if you like—by which it ascertained the amounts payable to each province. One wonders, for example, whether the average standard of social expenditure referred to in the Report is an average of the amount spent by all provinces or whether it was found necessary to exclude one or two provinces, as in Australia, because their standards were abnormally high or low. Again one would like to know how the average severity of taxation and the deviations therefrom were measured. It seems very desirable that when exact amounts are being calculated to a settled plan, these calculations should be presented for inspection.

One further possible 'sin of omission' may be mentioned. It is usually regarded as unwise to hinder the natural flow of the factors of production from one area to another where they can command a greater reward, unless the causes which brought about the particular situation are clearly temporary. Since revenue transfers designed to ensure rough equality of standards in living and government as between provinces may act as brakes to the flow of the factors of production, the Commission might have been well advised to include a small section early in its report justifying its apparent objective. The justification could have included political and social as well as economic considerations.

It is to be hoped that the *Report of the Royal Commission on Dominion-Provincial Relations* will receive the serious examination it deserves from the Canadian Parliament when attention returns to internal reforms after the war.

D. IVOR.

Scientific Distribution. By R. SIMMAT. Sir Isaac Pitman & Co., Ltd. 1940. xi + 167 pp. 10s. 6d.

This is the work of a practising specialist in marketing. It aims "to provide an outline of the trends of thought and practice concerning the problems of distribution and to forecast what developments are likely in the future", and is addressed to the student of business and economics as well as to the business man. Its interest in revealing the approach and viewpoint of the practitioner is some compensation for the lack of discussion of the theoretical issues involved.

The opening chapter briefly reviews the history of marketing methods from early times to the era, beginning in the 1920's with the advent of consumer research, of 'scientific distribution', defined as the process of "assessing in concrete terms market potentialities, and adapting production accordingly". This is followed by rather thin accounts of State regulation or control of distribution and of voluntary regulation of marketing by combinations of producers, trade associations, etc. The body of the book considers a series of practical problems of distribution—market research, stock control, price policy, advertising, etc. Much of the material incorporated here will be familiar to the economic specialist in distribution. There are serviceable discussions of the wholesaling function and of the conflicting objectives of the sales manager on the one hand and the production manager and financial comptroller respectively on the other, and a timely reference to the effect of branding in stimulating backward and forward integration between manufacture and selling where specialisation would have been more advantageous. The account of the (Filene) Model Stock Plan does not make it clear that it is not universally applicable, since where turnover is seriously affected by restriction of variety, the consequent reduction in gross margin may exceed the saving from bulk-buying and in capital charges from increased stock-turn.

Scientific distribution, the author claims, calls for ‘ regulated ’ marketing, involving, *inter alia*, registration of retailers and State or private monopolistic control, to implement the information revealed by consumer research. The reason given is that ‘ competition ’ produces duplication of stocks, excessive expenditure on advertising and ‘ service ’, and redundancy of outlets. The detail behind this complaint is, however, in terms of *imperfect* competition, and, moreover, the imperfection that arises from legislative and institutional causes : branding, ‘ aggressive ’ advertising, resale price maintenance, and the other instruments of product differentiation. In this sense the complaint has good ground, but the reasoning on which it is based in no way suggests that the evil would be removed by restriction on entry and the creation of distributive monopolies. It points rather to legal reform to reduce the potency of these instruments as the more pertinent remedy. Supplemented by measures to facilitate comparison between qualities and prices, this is more likely to increase the efficiency of distribution than the reproduction on a large scale of devices whose reputation has certainly not been enhanced by a decade of ‘ regulated ’ agricultural marketing.

A. SELDON.

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